

MEDICAL AND SURGICAL REPORTER

No. 1717.

PHILADELPHIA, JAN. 25, 1890.

VOL. LXII.—No. 4.

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CLINICAL LECTURES.

CHRONIC INFLAMMATION OF THE HEART AND ARTERIES.¹

BY ARTHUR V. MEIGS, M. D.,

Visiting Physician to the Pennsylvania Hospital.

Gentlemen: This man, 22 years old, single, born in England, and having lived two years in America, was admitted to this hospital, September 2. He was employed in a dye-house connected with a wool factory, but during the twelve weeks before his admission he was unable to do any work. His family history is negative. He had rheumatic fever four years ago. He chews tobacco to excess, but does not drink. The first symptom he noticed in connection with his present attack was shortness of breath on exertion. One week later he says his

belly was so swollen that he could not button his trousers. This swelling would subside during the day. About seven weeks before his admission he began to cough and expectorate a dirty phlegm. Some time later he also noticed that he urinated frequently and that his urine was often blackish. His appetite was good, and his bowels normal. His feet never swelled and he perspired freely. His temperature on admission was $100\frac{1}{2}^{\circ}$ F. During the first three weeks after admission he had moderate fever, only once as high as $102\frac{1}{2}^{\circ}$; what I should call feverish, rather than actual fever. On admission his urine was dark amber color, cloudy, with a specific gravity of 1.011, and slightly albuminous. The microscope showed it to contain red blood corpuscles, loose epithelium and epithelial casts. He says that he had previously always enjoyed good health, and that his sickness came on gradually. This test-tube contains some of his urine of this morning. The upper portion has been boiled, and you

¹ Delivered at the Pennsylvania Hospital.

will observe there is a moderate amount of albumin.

I will now make a physical examination in order to ascertain if it will reveal anything bearing upon his condition. The moment I listen over the apex of the heart I discover a loud murmur. On inspection I notice increased pulsation in the precordial space, and pulsation in the epigastrium, which is never seen in health. This impulse is heaving and forcible in character. On palpation it is perceived that the heart beats over an increased area and with increased force; and there is a slight sensation of thrill imparted to the hand. In percussing over the heart some rule should be followed, and the one I adopt is to percuss in a vertical line, one inch to the left of the sternum. The cardiac dulness should begin at the third rib. There is here slight impairment of resonance at the second interspace, almost dulness at the third rib, and flatness at the fourth rib, so there is a slightly increased cardiac dulness upward. Transversely we percuss at the level of the fourth rib. Slight dulness begins one-half to one inch to the right of the sternum, and extends to a little to the left of the nipple line. This is more than normal, and we have an increased transverse dulness of from one to one and a half inches. The cardiac and hepatic dulness run so closely together that we can more readily find the lower boundary of the heart by looking for the apex beat. We find it in the fifth interspace and some distance to the left of the nipple line. Auscultation is the most important means of physical diagnosis in such cases. We listen at four different points for the four different sounds of the heart. The important thing to learn is the condition of the left heart. We listen at the apex for the mitral sound, at the third left costal junction for the pulmonary, and the second right costal junction for the aortic sound, and at the left edge of the ensiform cartilage for the tricuspid sound. In ausculting I usually first use my ear, but by means of the stethoscope we can localize sounds more readily. At the apex I hear two sounds distinctly. The first has a thumping character, that is, it is accentuated; and then there is a very distinct murmur, somewhat prolonged, blowing and harsh. I proceed next to ascertain its time. Murmurs do not commonly displace sounds; they either follow or precede them, and the only way we can determine the time of a

murmur is to find when the sound occurs and then notice whether the murmur precedes or follows it. I place my thumb upon the carotid pulse, for it is said if the murmur precedes this it is a presystolic sound, as the carotid pulse is believed to occur simultaneously with the systole of the heart. This is not exactly true. The first sound of the heart is caused by the closure of the mitral and tricuspid valves, and at the same time the heart strikes the chest wall. But it is some distance from the heart to the carotid artery in the neck, and a slight interval of time elapses between the apex beat and the corresponding beat of the cardiac artery, and if the pulse is delayed, as in this case, it is difficult to exactly tell the time of the murmur. This murmur distinctly takes place before the carotid pulse, and also slightly before the cardiac impulse itself. It is therefore a presystolic murmur, and occurs during the passage of the blood through the mitral opening. At the pulmonary area the second sound is accentuated, and the murmur is audible to a slight degree. At the aortic region both sounds are audible, the second is not accentuated and the murmur faint. At the left ensiform region both sounds are fairly good, and there is a faint systolic murmur, different in character from that heard at the apex. There is no murmur heard in the carotid artery except on pressure, and in the subclavian artery listened to just below the outer third of the clavicle there is likewise no murmur. The murmur at the tricuspid area is very common in enlargement of the heart and signifies nothing. In examining the lungs I find no dulness on percussion anteriorly, and the respiratory sounds are fairly good, with no râles. Posteriorly at the apices, and between the scapulæ, there is fairly good percussion resonance, but it is slightly impaired on the right side. At the bases we find impairment of resonance, of moderate degree, over the lower half of the right side, and on the left side of less degree. Over the lower half of the right side there is almost total absence of vesicular sounds, with some râles. On the left side there is more crackling, but the respiratory sounds are heard. Vocal resonance is more distinct on the left side, but vocal fremitus is alike upon both sides. If the chest were full of liquid there would be no vocal fremitus, so the trouble here is pulmonary, and not pleuritic. The liver dulness begins at the fifth rib slightly, so it is one-half to one

inch above the umbilicus. The spleen is enlarged, but this is due to the disease of the tissue. The sense of touch is decidedly impaired either in the hands or in the feet. There is more in the September thickening of the heart. His torso is right, smooth, paralytic. We thought that say that Bright's inadequate found. of lung, kidney, which embolism of the diaphragm cause, embolism. The first was one was for one or drawn evidence to say he had diseases but a very is some and the think very often the very condition of Henry's ing with but if inflamm increase less deep you hear taken from agitated kind but other, have

inch above the natural position. It also extends slightly below the costal border. The splenic dulness is also slightly increased, but this, as well as the hepatic dulness, may be due to an increased density of the lung tissue. The abdomen shows no distinct sense of fluctuation. His fingers are decidedly clubbed. His radial arteries are either somewhat stiffened, or else his pulse has the high tension character. One thing more in regard to this man's condition. On September 7 he had some difficulty and thickness of speech on rising in the morning. His tongue was slightly deflected toward the right, and the right side of his face seemed smoother than the left. This slight facial paralysis passed away in two days.

We have here a most complicated case, though a very ordinary one. We might say that this is a common attack of chronic Bright's disease, but that would be a very inadequate explanation of the condition found. We have evidence of brain disease, of lung disease, of heart disease, and of kidney disease. He has had apoplexy, which we might explain as arising from an embolus broken off from his diseased cardiac valves, but I do not think this was the cause, for it is not a common thing for an embolism to occur in chronic heart cases. The first symptom of which he complained was one connected with his heart. This was followed by the lung trouble. Then one or two weeks later his attention was drawn to his kidneys, and still later we have evidence of brain trouble. It would be easy to say that this was a coincidence, and that he had been affected with all four of these diseases, but this, it seems to me, would be but a weak explanation. It must be there is some connection between these troubles and that one is the cause of the others. I think we can find a solution in the fact that often there exists disease of the arteries and very commonly of the veins before the other conditions arise. The fenestrated membrane of Henle has in the normal condition nothing within it in arteries but the endothelium, but if the intima becomes thickened from inflammation from any cause, it may increase enormously occluding to a greater or less degree the calibre of the vessels. I show you here some illustrations of this condition taken from actual cases. The question which agitates the profession in cases of this kind before us to-day is which antedates the other, the heart or the kidney disease, or have we something preceding both and

causing both. You must know that chronic heart disease is by no means always due to rheumatism but often arises gradually from slow inflammation of the lining of the arteries and heart. It is a very common thing that the first symptom complained of in these chronic cases is the lung trouble, and so we must go back of the heart and of the kidney disease in order to find the cause. It is likely that the trouble began in this man with his rheumatism, the other troubles arising from the endarteritis so produced.

The prognosis is bad. He has a damaged mitral valve, his kidneys have suffered considerably, he has suffered some injury of the brain, and has also inflammation of the lungs. However, he has no trouble so great at present as to be incompatible with life. If the relation is not further disturbed he may live indefinitely. Chronic Bright's disease often lasts a very long time. The outcome depends upon what will take place in the future; whether the already existing disease will progress or remain stationary, for if the latter, he may live a long time.

If I have impressed upon you the fact that in chronic heart disease you must look beyond rheumatism and overwork for a cause, I think my hour will not have been wasted. The contracted form of kidney is likewise due, I believe, to gradual changes in the arteries and veins rather than to a true inflammation in the kidney itself.

IDIOPATHIC HEMATURIA. — FIBRINOUS MOULDS OF THE URETER. — INTERSTITIAL NEPHRITIS FROM IMPACTED STONE.

BY JAMES TYSON, M. D.,

PROFESSOR OF CLINICAL MEDICINE, UNIVERSITY OF PENNSYLVANIA.

Gentlemen: I present you first to-day a girl 19 years old, who works at service and who had been attending in the dispensary for two weeks prior to her admission to the hospital. Her family history is negative, and she seems to have been free from sickness since childhood. Her present illness dates five weeks back, at which time blood appeared in her urine. With this well-marked hematuria, which had been sudden in its onset, she was admitted a week ago to the hospital. She had no subjective symp-

toms, and only one other objective sign, that of extreme pallor. She is otherwise well-nourished, suffers no pain and shows no signs of tenderness anywhere; neither does she exhibit any derangement of menstruation. There is a history of a slight tenderness in the region of the bladder some time ago, but this is now absent. The pallor I ascribe to the loss of blood through the urine. The latter, when first the hematuria appeared, was of such a bright and clear red color that it seemed almost as if it were pure blood. Hence the question arose whether the blood came from the urinary passages or not. The patient was catheterized but still the urine was equally bloody, proving that the blood came from the bladder or kidneys. The next point to be determined was which of these possible sources was furnishing the flow. The presence of blood tube-casts in the urine would have been a positive proof that the trouble was renal; but no casts have been found. Still, although their presence would have been conclusive, their absence does not disprove the possibility of the hemorrhage having a renal source. We must look for further evidence. Blood from the kidneys seldom coagulates unless very abundant; but percolates slowly with the urine, and becomes intimately admixed. Occasionally, when copious, as we shall see later, it forms blood casts of the ureters in the form of long worm-like bodies. The blood from the kidneys is also darker in hue or rather of a less bright red color than from the bladder. On the other hand, hemorrhage into the bladder causes greater irritation and frequent micturition. These symptoms are entirely absent in this case. In the female we can make ourselves still more certain of the patient's condition by the use of Simon's dilators. Simon's dilators consist of six rubber cylinders graded in size, the smallest being 28 millimeters in circumference, and the largest 58 millimeters in circumference or nearly an inch in diameter. With these, the patient being under ether, the urethra is gradually dilated. Often number 5 will distend the urethra sufficiently to allow the passage of the index finger, which is introduced into the bladder while the middle finger is passed into the vagina. This examination has been made in this case with negative results. The most common cause of hemorrhage into the bladder in females is a villous growth on the bladder walls. None such was found. Nor was there any calculus present. We con-

clude, therefore, that the blood comes from the kidney.

If the hemorrhage is renal, what are its sources? In acute Bright's disease there is a small hemorrhage but it is never as copious as this. Quite a common cause of large hemorrhages is malaria. A therapeutic test will generally soon settle this question. Three grains of quinine every two hours will check the flow completely. This is a possible cause in this case, but I have never seen cases of this type originate in Philadelphia. They occur in intensely malarial districts; but, not only in our extreme South, as I have seen them from the valley of the Susquehanna or Juniata. This patient, although put on quinine, in large doses, failed to show signs of abatement of the hemorrhage, proving that the trouble was not a malarial one. A tumor of the kidney might produce such a hemorrhage. In sarcoma of this organ, it may be the first symptom; on the other hand, the malignant disease sometimes runs its course without the smallest flow of blood. Sarcoma is generally found in children; it is liable to be congenital and alters, to a great degree, the contour of the abdomen. Carcinoma, while appearing after birth, is generally also confined to children, although it is seen in adults occasionally. It is always associated with pain in the region of the organ.

Hemorrhage from the kidney is due sometimes to hemophilia, which is a curious constitutional condition, resulting from a peculiar state of the blood, characterized by bleeding from mucous surfaces. This disease is found markedly in certain families, and is apt to be associated in the cachectic stage with a dyscrasic state of the blood, *i. e.*, with an increase of the white corpuscles. There is nothing of that sort here; the cachexia in our patient is not the cause, but the result of the trouble. Copious renal hematuria is also associated with purpura, but there are no other purpuric symptoms in this case. Hemorrhage can occur in connection with calculus, especially when impacted; the flow of blood is, however, generally small and in this case there is nothing but the hemorrhage to show the existence of stone. Hemorrhage due to stone is also intermittent.

Finally, there is a class of cases in which, despite the most careful search, no assignable cause can be found; in these cases where no explanation covers the statements, we are in the habit of applying the term, *idiopathic*.

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hematuria. Diagnosing by conclusion we are forced to conclude that our case falls in this category.

As to treatment, when possible the cause is removed, but frequently we are reduced to treating the symptoms as they arise. Astringents are usually presented, such as gallic acid in doses of 15 gains four times a day. Ergot may be used for its action on the muscular coats of the arteries. The persulphate of iron in one-half grain doses is often of service, especially when, combined with strychnine in one-thirtieth grain doses. Many stubborn cases of inexplicable hemorrhage, which will yield to no drugs, are cured by the use of astringent mineral waters, all which contain alum, or alum and iron, being useful. Most cases of this class will yield to this treatment. We will therefore order for her Rockbridge Alum Water in two-ounce doses four times a day.

[Four days after the commencement of the alum water, the patient's urine began to be intermittently bloody. A week later, the urine appeared, to the naked eye, to be free from blood. It hourly contained a small amount of albumin, probably due to the presence of a little blood; still, a week later all trace of blood had disappeared.]

I now show you a second case, which is especially interesting as a companion picture to the first patient. She is forty-five years old, is married, and has had seven children, of whom three are still living, the youngest being seven years old. Eight years ago there appeared an aching pain in the left lumbar and iliac region, followed by shooting pains down the left leg and thigh. These attacks were followed by loss of flesh. After this condition had lasted some time she passed moulds of the ureters such as I here exhibit. Their transit was accompanied by severe pain in the course of the ureter, while bloody urine preceded and followed their discharge. These moulds are blood clots as thick as my index finger, four to five inches long, smooth in appearance. Some of them had to be drawn through the urethra. She applied at this dispensary for treatment in June, 1887, with the same symptoms, and was at once placed under treatment. She passed no clots for over a year. Microscopic examination of thin sections of these clots show them to be almost pure fibrin, and since they are moulds of the ureters the blood producing them can only have come from the kidneys. There are some other points which aid the

diagnosis in this case which we did not have in the former. There is pain and tenderness in the left flank, over the left kidney, which can be produced by pressure even through her dress. It is, however, restricted to one side. It is probably caused by one of two conditions: malignant disease or impacted stone. The pain is compatible with either condition. But the long duration of the trouble and the slight influence on her general health makes the former less likely, and it is not unlikely we have an impacted stone. There is no curative treatment when a large stone becomes thus impacted other than by operation. This operation of cutting down on the kidney and removing the stone is growing common and is rendered comparatively safe by antiseptic surgery. But while we have no medicines which will dissolve a stone once formed, we can still relieve her suffering by making the passage of the clots easier. This latter object can be accomplished by the use of the alkaline diuretics, which will keep the blood discharged thin and the urine alkaline. The acidity of the urine does not interfere with the coagulation of the blood in the ureters, but alkaline urine does. We can also diminish the hemorrhage by the same remedies as we have already mentioned above.

The next case is in some respects similar to the latter. A man, sixty-two years old, by trade a carpenter, had four years ago a severe colic on the left renal region. This continued off and on for some months, then asthma appeared; he became short of breath and oedema of the leg and feet appeared. Headaches are common with him and his urine contains albumin in small quantities and occasionally casts. These are the symptoms of interstitial nephritis, and illustrate another of the consequences of impacted calculus, of a size sufficient to obstruct the ureter and cause colic. Notice the tortuous appearance of the temporal artery; its calcification of the inner and middle coat is due to chronic endarteritis, a part of the symptomatology of interstitial nephritis.

Drs. Maximilian and Jolles, of Vienna, claim to have discovered the bacillus of "la grippe." The discovery, they state, was quite accidental. The new bacillus is said to be quite distinct from Koch's comma bacteria, but resembles, somewhat, the bacillus of pneumonia.

COMMUNICATIONS.

A SUCCESSFUL CÆSAREAN SECTION FOR A LARGE BONY TUMOR CHOKING THE PELVIS.

BY HOWARD A. KELLY, M. D.,
BALTIMORE, MD.

Many of the curious and rare subjects over which scientific medical men spend much of their time in investigating and experimenting, are reproached by the physician at large, as not being sufficiently practical in their tendencies. The Cæsarean Section, however, is an operation which is relatively very rare, it has always excited the wonder and curiosity of our race, and, if I may use the language used forty years ago by Dr. Winckel, of Berleburg, it has, in these latest times, lost so much of its dangers as to become a comparatively safe operation.

It has the dignity of dealing with two lives at once, a woman in a position of such helplessness and extreme danger as to excite our sympathy to the highest pitch, an unborn child whose future possibilities are unlimited. It has the glory of literally snatching one or both of these lives from a certain death, and, to reiterate the statements of more writers than Dr. Winckel and with a peculiar and new emphasis from the 16th century down, "in these days it has become a very safe operation."

The case which I report in these pages is my third. Both of the other cases made a quick and in every way a satisfactory recovery, although one of the mothers had been in labor for two weeks, and had at the time of operation a pulse of 142. In the second case the parents refused craniotomy, and with the support of the greatest living authority, my friend Dr. R. P. Harris, I performed a successful Cæsarean Section; so satisfactory was the result to the patient that she recently declared that a premature labor with a small child which she had just passed through was much harder and more painful.

This third case is one of more than usual interest. The history in outline is that of a young woman who was pregnant for the fifth time; her previous labors, satisfactorily terminated, as far as the mother was concerned, but demanding all the skill of a very experienced accoucheur to free her from the burden of a dead and mutilated child. When placed in my care during her last pregnancy I found her near term, with the pelvis

choked by a large bony tumor, springing from the sacrum and ilium on the right side.

A Cæsarean Section was performed at term, and she soon returned home after a normal puerperium.

The details of the case are as follows: Through the courtesy of Dr. Parcels, of Lewistown, Mrs. S. came to me, on the 25th of April, 1889. As she entered my private office with a letter from Dr. Parcels in her hand, she presented a peculiar and somewhat characteristic appearance, waddling along, but five feet high, sallow brown-skinned, with an unusually prominent belly. German by birth, 34 years of age, menstruation began at 20, married for seven years; she had been used to very hard work all her life. She had been pregnant four times, 6, 5, 4, and 3 years ago, the second birth was premature, at six months. The first three children were females, the last a male.

During the first six months of her first pregnancy, she had suffered from icterus. She began to be in labor one Sunday morning, the pains became very severe, continuing until Wednesday, when they became intermittent and feeble. Her medical attendant then gave an anæsthetic and extracted the child piecemeal. Puerperal fever followed this labor, confining her to bed for eight weeks. After rising she took cold and swelled in hands and feet, and was obliged to return and to remain in bed three weeks longer. In the third pregnancy labor lasted for two days, when it was completed by the physician, who broke off both feet and an arm, in his efforts to deliver the fetus. Another physician was then summoned, who completed the extraction. The placenta followed three days later. She was confined to bed by a fever for three weeks after this labor.

A letter from Dr. Parcels contains this interesting and graphic account of the two labors in which she was under his care: "I was called to attend her Jan. 8, 1885, and found the pelvis choked by a broad-based, hard tumor, attached to the sacrum. The conjugate diameter was then estimated at 2½ inches.

"Failing to deliver her with the forceps Dr. Sheaffer (now deceased) administered an anæsthetic and forced the uterus down into the pelvis by pressure upon the abdomen, when I perforated the head, and crushed it with forceps.

"Even after removing a large part of the cranium, delivery could not be completed until podalic version was performed. The



whole operation was tedious and exhausting to the patient, but she made a good recovery.

"I was again called to her June 11, 1886, and found that the tumor had grown, increasing so that the conjugate now measured from $1\frac{1}{2}$ – $1\frac{3}{4}$ inches.

"I again performed craniotomy and attempted to deliver, but with an experience quite different from the previous operation. After the cranium had been completely removed down to its base, I was still unable to extract the body until I had performed podalic version. The placenta was loosened and blood was pouring out at the vulva; my hand, which is small, passed the obstruction, but caught at the arm. Dr. Sheaffer pushed hard on the fundus, forcing the uterus down on to my hand. Long and faithfully I worked, fishing for the foot which I at last succeeded in catching and drawing outside the vulva.

"While I rested, Dr. S. made repeated efforts to deliver, but failed entirely for want of strength. Securing a good hold, with one foot against the bed, I pulled until I tore the leg off at the hip. The other foot was easily caught, and by its aid the mutilated trunk was delivered. The placenta followed. She had lost an enormous amount of blood, and her pulse was almost imperceptible. She recovered so rapidly, however, that in four days her condition was good."

I found upon the examining table both tibiae markedly curved, and a rachitic pelvis. That her pelvis is small and flattened antero-posteriorly, is shown by the following measurements: Pelvimetry, distance between the anterior superior spines, $8\frac{3}{4}$ in.; between the iliac crests, 10 in.; from the last lumbar spine to the symphysis pubis, 7 in.; and between the two trochanters, $12\frac{1}{4}$ in.

The escutcheon, that is, the distribution of hair on or about the female genitals, was of a markedly male type, tending to run up into a point towards the umbilicus. A curious elongate rectocele pouted out of the vaginal outlet, 6 cm. in length by $4\frac{1}{2}$ cm. in breadth.

Upon carrying the examining finger into the vagina it butted at once against a large tumor choking the pelvis, and projecting out of the pelvis under the pubic arch. The whole pelvic cavity was choked, from the superior strait down to the pelvic floor. The vagina lay flattened out over this mass, behind the left pubic bone, high up on the left side; on a level with the superior strait, was the cervix uteri, split posteriorly. The

tumor evidently arose from the sacrum, and the adjacent part of the right ilium, filling out the pelvic cavity in such a way as to leave open a small crescentic area, widest at the position of the cervix, skirting the pelvic brim to the left sacro-iliac junction posteriorly, extending anteriorly as far as the ileo-pectineal eminence on the right side. This was the only communication from the abdomen into the pelvis. It was thus crescentic in shape, with the concavity directed backwards to the right sacro-iliac junction.

FIG. 1.

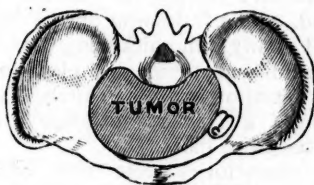


Fig. 1 shows way in which the pelvis is choked by the tumor, looking in at the superior strait.

c is the cervix uteri, split posteriorly, occupying the small crescentic lumen, the only free space not encroached upon by the tumor.

The tumor was dense throughout, yielding a crackling sensation at points, as if it were covered by a shell. At its widest point the lumen of the canal measured 2 cm. from tumor to pelvic wall; just behind the symphysis pubis the breadth of the crescent was 1 cm. The pregnant uterus lay obliquely across the abdomen, depending to the right side, the child also lay in this position, with the head entirely above the brim of the superior strait:

FIG. 2.



Fig. 2 shows the right obliquity of the uterus, the cervix being fixed as shown Fig. 1, at the $1\frac{1}{2}$ extremity of the transverse diameter of the pelvis, while the fundus lies in the right hypochondrium.

The circumference of the abdomen at the umbilicus was 91 cm. on May 4, and 95½ cm. on May 9, when the position of the child had changed so that its buttocks lay in the left hypochondrium, with its back applied against the anterior abdominal wall; the fetal heart beat was 130 per minute, heard with greatest distinctness ¾ in. below, and 4 in. to the left of the umbilicus.

The urine of a pale color, sp. gr. 1004, was free from abnormalities.

OPERATION.

Preparations were started a week before the operation; the diet list was restricted to soft food, with a little meat once a day, she received a daily bath quickening the activity of the skin and thoroughly cleansing the field of operation and the genitals. Vaginal douches of a 1-4000 bichloride solution were given twice daily.

The emunctories were very carefully watched and regulated, the bowels were very constipated and required constant attention. Slight incipient pains were felt for several days before the operation, which was performed May 10, at an appointed hour.

Dr. Robb, my assistant in the other cases, assisted here also with Dr. Noble, and Dr. Gramm, who gave the ether. Dr. F. Milliken stood at hand ready to take the child. Immediately before the final careful local cleansing which always precedes any abdominal operation in my clinic, she was carefully examined by the late Dr. Elwood Wilson, Dr. J. Taber Johnson of Washington, Dr. Parish of Philadelphia, and Dr. Platt of Baltimore. Drs. Robert P. Harris and Charles W. Dulles, who had previously examined her, were also present. The invited guests were Drs. Parcels, Githens, C. M. Wilson, Gibbs, Longaker, O'Farrel, Boyd, Farr, Lincoln, Reath, Steer, Ireland, Starck, Baldy, Haehnlen, Guthrie of New Mexico, Marks, Van Buskirk, Markley, Grimm, C. Goodell, McKelway, and Pugh.

The first important step was the preparation of the field of operation. All the genital hair was shaved off, as well as the fine hair over the lower surface of the abdomen, this was followed by careful scrubbing of the skin with soap and water, followed in its turn by a bichloride solution (1-1000).

The field was then isolated from all surrounding parts, first by two layers of gauze, one transversely across the epigastrium above, and the other across the upper part

of the thighs below; a long and broad piece of gauze was then laid over the whole of the abdomen and the towels, and through a hole torn in the median line the whole uterine area was exposed for operation. Through this gauze and thus protected from contact with the remainder of the abdomen, the uterus was opened, and the child delivered. The incision through the skin was 20 cm. in length, one-third above and two-thirds below the umbilicus. The red uterus was thus exposed, and while Dr. Robb was engaged in pressing in both abdominal walls I made an incision 15 cm. in length in the uterus, starting at a point just below the fundus, down the median line up to the cervical area at the point of loose attachment of the peritoneum. The placenta lay just beneath the incision (Placenta prævia cesariana). Pushing the hand between this and the uterine wall, the membranes were reached and broken through. With the gush of the amniotic fluid the child's arm came up into the incision, and was grasped. The uterus contracted so rapidly that a little difficulty was experienced in the delivery. The head stuck in the lower segment, and it was necessary to lengthen the incision downwards before it was extracted. In one minute and fifteen seconds after the commencement of the operation a well-developed healthy male child was delivered and handed to the assistant. He was born deeply congested with two coils of the cord around his neck, crying as he came out of the incision.

Fig. 3.

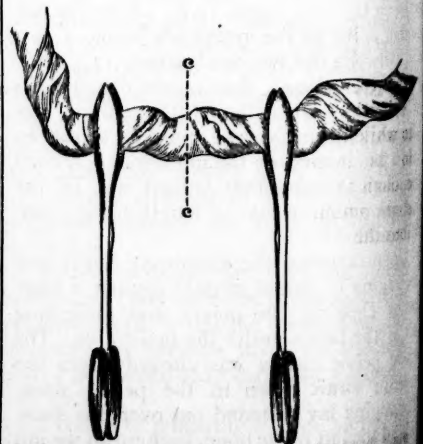


Fig. 3 shows way in which the cord was quickly clamped, without waiting to tie, and cut between at c c.

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As every moment, while I was working the abdomen, was precious, to save a little time I clamped the cord between two artery forceps lying close by my hand and cut between.

Dr. Milliken afterwards tied the cord carefully. The placenta and membranes at once followed the delivery of the child, and the uterus contracted rapidly diminished the hemorrhage, which had been very free. The next step was to raise the now small uterus out of the abdomen, to protect the exposed viscera behind by layers of gauze wrung out of hot water laid across the incision, upon which the uterus rested. In order to control the circulation completely, Dr. Robb grasped the cervix uteri in his full hand and compressed it, while I rapidly introduced the deep sutures which closed the uterine wound, in order from above downwards, tying them as introduced, with the exception of the lowest. Eight deep silk sutures were passed, about four to the inch, catching the peritoneum and muscularis but not the decidua.

FIG. 4.

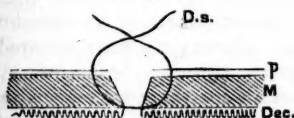


Fig. 4 shows the first deep suture (D. s.) introduced, grasping the peritoneum (p) and uterine muscle (M), but not the decidua (Dec.)

The deep line of sutures was then covered in by thirteen superficial, serous sutures. Each suture was tied tight enough

FIG. 5.

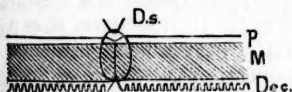


Fig. 5 shows the effect of drawing the same deep suture up, and tying it.

to whiten the uterine tissue over a small area in its immediate neighborhood, but not enough to strangulate the tissue. The very slight amount of blood which had escaped into the abdomen was readily removed by

FIG. 6.

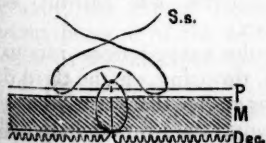
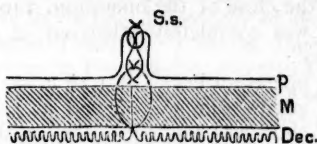


Fig. 6 shows the superficial suture (S. s.) introduced, grasping peritoneum (p) alone in such a way as to cover in the deep suture (v. Fig. 7) when pulled up and tied.

FIG. 7.



hooking up the lower angle of the incision with two fingers, and wiping out the vesico-uterine pouch, and by raising the uterus and cleansing recto-uterine pouch.

FIG. 8.

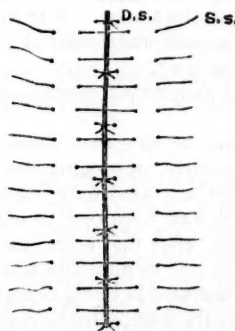


Fig. 8 gives a view of the sutures, deep tied, and superficial in place ready to tie, as one sees them looking down on to the uterus.

These series of figures show the most important part of the procedure, the closure of the uterine wound. Figs. 4, 5, 6 and 7 represent the uterus in sections across the wound, while Fig. 8 shows the long line of incision on the plane surface.

The uterus was now returned to the abdomen, where it lay among the intestines wholly without the pelvis, tilted strongly to the right, the left cornu being rotated forwards. After examining the exact relations of the tumor, the thin veil-like mesentery was drawn down over the uterus, and the abdominal wound closed, by deep and superficial sutures. Several hypodermics of brandy and ergot were given at intervals throughout the operation. Before applying the binder I examined the cervix per vaginam with the intention of dilating it, but found it patulous. After a vaginal douche of 1-2000 bichloride solution an occlusive pad of bichloride cotton was applied to the vulva, with directions to change it every four hours.

I am indebted to Drs. McKelway, Milliken and Gramm for the following valuable notes taken during the operation:

Pulse, previous to taking ether, 104, after

taking ether for eight minutes, 120, and towards the close of the operation, 140.

She was completely etherized in fifteen minutes.

The operation began at 3.42 P. M.

The peritoneum was opened at 3.42.15.

The child was handed to the assistant at 3.43.15.

The uterine suture was commenced at 3.45.

The eight deep sutures were introduced and tied by 3.51.

The thirteen superficial by 3.57.10.

Some time was devoted to a careful examination of the tumor. The suture of the abdominal wound was started at 4.00.30 and completed at 4.07.

The total amount of ether used was nine ounces.

It will thus be seen that there can be no excuse for greatly prolonging this operation, except under extraordinary circumstances.

The child was born one minute and fifteen seconds after the knife was taken in hand, and in one minute and thirty seconds the uterine wound was being closed. In nine minutes from the start, with the complete closure of the uterine wound, all chance of serious bleeding was over. In six more minutes the thirteen superficial sutures were in place, burying the deep line.

The duration of the operation, up to the point common to all abdominal operations, the closure of the abdominal incision, was fifteen minutes.

The child when born was of a livid bluish-red color, gasping as it was drawn from the wound. There was no apnoea. The pulse was 140 at birth. In two minutes it had quickened to 152. No chest measurement could be made before inspiration, after inspiration it was 30½ cm. The child was a male weighing seven pounds.

The diameters are especially interesting, as they were taken from an average living child, directly after a birth in which the head was entirely free from any moulding influence in the maternal passages.

Diameters, Biparietal, 3¼ in.

Bitemporal, 3 in.

Bimastoid, 2⅞ in.

Sub-occipito-bregmatic, 3½ in.

Occipito-frontal, 4⅞ in.

Occipito-mental, 4¾ in.

Circumferences, Occipito-frontal, 12 in.

Sub-occip.-breg., 11½ in.

Bis-accrom. diam., 4 in.

Bis-accrom. circum., 12 in.

Length of child, 16¾ in.

Length strongly flexed, 8½ in.

I am indebted to Dr. Harris for the following valuable letter handed me at this operation, showing concisely the status of the Cæsarean operation to-day for the world at large.

"May 9, 1889.

"The Säger-Cæsarean operation has obtained its highest rate of success in Germany, where, up to January 1, 1889, it had been performed 86 times, by 40 operators, in 18 localities, with a loss of 11 women. It is an error to claim, as has often been done in society discussions, that German successes are due to the operations having been performed by a few very skilful men. The fact that these 40 men saved 34 of their first cases, is sufficient to set this assertion aside. Prof. Leopold, of Dresden, it is true, has operated upon 18 women; but it is also true, that three of them died, or one out of six, while the death-rate of the balance is 8 out of 68 or one out of 8½; the whole average being one out of 7⅞. Prof. Leopold had some very unfavorable cases.

"In Austria, up to the same date, there were 29 operations under 11 operators, with 6 deaths. These six deaths occurred in the first 9 cases, prior to September 1, 1886, since which date, there have been 20 operations in order, without a death, under 9 operators, in a period (Oct. 7, 1887, to Jan. 1, 1889) of fifteen months.

"These records show the possibilities of the operation, when performed upon subjects giving a reasonable hope of success.

"There were 61 operations in all countries, in 1888, with 12 deaths. Of these, 7 deaths occurred in the United States after 12 operations, and 5 deaths in Continental Europe after 49 operations. Germany lost 3 cases out of 25, and Austria had not a death in 18 cases. Up to January 1, 1888, there were 170 operations in all the world, with 43 deaths. The record shows, that the death-rate is greatly diminishing.

"R. P. HARRIS."

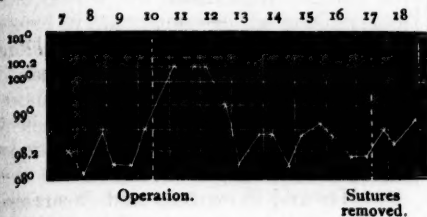
THE PATIENT AFTER THE OPERATION.

Her progress was entirely satisfactory throughout.

The pulse ranged from 120 to 108 for two days, dropping on the third day to 86, and varying after that from 78 to 90.

The temperature varied before the operation from 98-99, on the second and third days it barely crossed 100, dropping at

once, and remaining at 99 or below. The following sheet exhibits the temperature better than a detailed description:



I will describe her convalescence by a series of brief comments under capital headings:

PAIN.

She suffered but little after the operation, requiring in all but two hypodermics of an eighth of a grain of morphia on the day of operation, at 6.15 and 7.15 P. M.

NUTRIMENT.

There was no vomiting at any time. For six days she received brandy, at first every half-hour, on the day following the operation, every hour, one drachm, and after that at increased intervals. She complained much of thirst on the evening of the day of operation. For this she received teaspoonfuls of hot tea at frequent intervals. On the following morning a half ounce of tea was given at one time, followed an hour later by the same quantity of milk; an hour and a half after this, she received four ounces of milk and hot water. On the fourth day she complained of hunger. From this time the diet was gradually enlarged to full soft diet.

BOWELS.

On the day following the operation she had a spontaneous free movement of the bowels, followed three days later by a very large movement filling a bed-pan. I observed this peculiarity in my first case, and wish to call especial attention to it. It is exceedingly probable that almost all similar cases suffer from coprostasis towards the end of pregnancy, the natural consequence of the constant pressure of the ball-like head of the child in the first position, unable to engage, acting as a cut-off to the loaded sigmoid flexure at the superior strait. It is important to bear this fact in mind inasmuch as a loaded rectum may clog all the other emunctories at a time when it is of

the utmost importance that they should be active in ridding the system of the unusual amount of debris. I would, therefore, in all cases, in the absence of positive evidence to the fact that the bowels had been thoroughly emptied before operation, either by enemata or by mouth, insure a free evacuation by the second, or at the latest by the third day.

URINE.

The urine was drawn by the catheter every six hours for nine days. After the fourth day she voided it at times naturally.

SLEEP.

Sleep was fitful, being at times long and refreshing, at others in naps and snatches.

LOCHIA.

The lochia bright and free at first, had by the seventh day dwindled down to a scanty discharge. No active efforts were made to disinfect the vaginal canal after the operation. Sepsis was prevented from invading the canal by the pad of sterilized absorbent cotton renewed every four hours, and at each renewal, and whenever the nurse catheterized she separated the labia, wiped the parts dry, and threw a drachm of a powder of iodoform and boracic acid [1-7] into the vaginal orifice.

DRESSINGS.

The abdominal incision was thickly sprinkled with the same powder, and simply covered by absorbent cotton, held in place by a binder. This was changed several times during the first few days, whenever the cotton became wet.

SUTURES.

On the seventh day all of the sutures (8 deep and 9 superficially) were removed. The line of union was perfect throughout, measuring 11 cm. in length.

BABY.

The baby was put to the breast twice on the day of the operation, and at intervals on the day following. After this it received in addition to the breast-milk, some prepared food. He has maintained perfect health and flourished from the first. The mother's breasts were washed from the time she entered the hospital and before and after every feeding, with a solution of boracic acid and water.

RISING FROM BED.

A week after the stitches were removed, that is, two weeks after the operation, she got out of bed, where I deemed it unwise to detain her as she was becoming very nervous at the unusual inactivity, while feeling so well.

On the nineteenth day she went home, a distance of about two hundred miles.

CONCLUSION.

I have thus dwelt upon a number of details, distinctly minor in character, as I have hoped to produce a strong impression as to the perfectly simple character of her puerperium. It is my hope that the day is not far distant when all suitable cases will be promptly recognized by the attending physician, who is familiar with the advantages of the Snger-Cæsarean operation, and will bring them to the surgeon before the many futile attempts have been made to deliver *per vaginam* by which the patient has lost her last chances, and the Cæsarean section, however well performed, has been made little more than a farce.

I have spoken also at some length of an operation. Had this been the proper place I would have gladly dwelt upon the one fact which gave zest to the work, and made the burden of anxiety, and the hourly cares by day and by night a pleasure, the heroism of the mother, who hid her fears beforehand, and the maternal love which was at last abundantly gratified after so many fruitless labors.

As far as tender care and watchful interest were able to contribute to the successful issue in this case, the credit has been due in no small degree to my able assistant, Dr. Hunter Robb.

TEMPERATURE OF THE MOON'S SURFACE.—

Professor S. P. Langley has been making some investigations upon the temperature of the moon's surface. Contrary to the usually received opinion, that the surface of the moon exposed to the rays of the sun through the long lunar day becomes heated to a very high temperature, Professor Langley comes to the conclusion that the mean temperature of the sunlit lunar soil is much lower than has been supposed, and is most probably not greatly above 32° Fahr.

CREMATION.

WHAT IS THOUGHT OF IT BY PHYSICIANS.

INTERVIEWS WITH PHYSICIANS BY A REPRESENTATIVE OF THE MEDICAL AND SURGICAL REPORTER.

SIXTH SERIES.—BOSTON.

DR. HENRY I. BOWDITCH said: Years ago, being satisfied that cremation was the wisest method of disposing of all dead animal matter, which might be liable, unless destroyed, to promote disease, I made a motion at the meeting of the proprietors of Mt. Auburn Cemetery that a crematorium should be erected in the grounds of that burial place; or, if they were not disposed immediately to erect one, I wanted a committee appointed to report at a subsequent meeting on the advisability of such a proceeding. No one, however, sustained me. Any thought of the subject seemed repugnant to the meeting. Apparently all preferred that their friends and themselves when dead should be slowly destroyed by "maggots," and with the possibility of contaminating other living human beings, rather than by the quicker operation of fire to prevent the occurrence of either of these contingencies. It seems to me that all modern sanitary science points to cremation as the only safe way of disposing of the dead; and I feel confident that eventually it will be adopted everywhere. The burial grounds for families might remain as now, but the ashes (after fire has destroyed the noxious qualities) alone will be buried there, or they may be put in places thought more appropriate.

DR. DAVID W. CHEEVER said, Yes, I favor cremation.

DR. HERMAN F. VICKERY, being seen, said: I regard cremation as the best mode of disposing of our dead on two grounds: First, of health, and second, of economy. Fire destroys all germs of disease. It precludes infection, whether by the air or through the medium of poisoned drinking water. In regard to the second point, when cremation is fairly established, the expenses of funerals must be much less than at present; and, above all, large tracts of land would be preserved for the benefit of the living, which would otherwise remain as melancholy memorials of the dead. It should be added that for medico-legal reasons, rigorous laws

should be framed and careful supervision exercised, lest the evidences of crime should be destroyed along with its victim.

DR. HENRY O. MARCY said: I am not prepared to run counter to the prejudices of centuries by advancing cremation. Theoretically, it is correct, true science. Hermetically sealed coffins, however, will give safe funerals, so far as the body inclosed is concerned; while antiseptics can be inclosed in the caskets in quantities sufficient to destroy disease germs. These measures the public will accept at once for general adoption; but cremation will meet with serious and stubborn opposition. In this way preparation might be made for the introduction of more radical measures.

DR. FREDERICK C. SHATTUCK told our representative that he approved of the practice of cremation and that he should be glad to see it more generally introduced, perhaps even to have it become the universal custom. Several years ago he joined a Cremation Society but "it apparently was an untimely child and never saw the light." From the point of decency as well as of sanitary science cremation has much to recommend it. The only objection which offered itself was, the opportunity which it might afford to destroy the evidences of crime. On the other hand, its cheapness is strongly in its favor, though he supposes that the very classes,—the poorer and less educated—for whom economy is most important, would be the very last to adopt it.

DR. FRANCIS MINOT, on being interviewed, said: I believe that cremation is the only safe and desirable method of disposing of the dead known at the present time.

DR. E. G. CUTLER replied that the desirability of cremation in most cases seems to him unquestionable. Whether our laws about death certificates would have to be materially altered and the medical examiner's function extended, would be another question. Some additional safeguard would be needed to keep the evidences of crime from being totally destroyed. In the main, without any great thought on the matter, he approved of it.

DR. ELIZABETH C. KELLER said: The subject of cremation of the body is one which is rather revolting to me, hence I have not given it much thought. I should be ashamed to oppose it, for I think it may be the best way. I cannot advance it because I am sure I do not want to be thus disposed of.

DR. JAMES R. CHADWICK said that he was unqualifiedly in favor of cremation as the best process yet proposed for the disposal of the bodies after death. The subject admits of discussion from a utilitarian and a sentimental standpoint. On the ground of utility, a medical audience hardly needs to have presented to it the arguments in favor of the rapid and harmless disintegration of the body into its constituent elements. Second, by cremation, as contrasted with identically the same mode reached by the present custom of burial, by which Nature's process of slow combustion is indefinitely prolonged by man's interference. The instances of the deterioration of health of large communities and the deaths of many individuals are too numerous and too well established, as resulting from burial of the dead, to need recapitulation. Granting this much, we only need to consider whether cremation is a means of attaining the same end without its attendant risks to the living. Personal observations of the crematory established by the Crematory Society of England, at Woking, near London, warrants me in asserting that this purpose has been fully achieved. The process is there accomplished in from two to four hours, the gaseous elements escaping into the atmosphere and the universal elements, weighing three to four pounds, remaining in the crucible. The whole charge is but £6 (\$30). The only new danger that can possibly arise from burning the remains is that cases of poisoning might thereby escape detection. This objection seems to be met by the requirement that a perfectly satisfactory certificate must be signed by the medical attendant and by another physician, who has personally investigated the circumstances of the death, before the permit for cremation is issued by the Society. The objection to cremation on the ground of sentiment is natural, deeply-rooted, and hence hard to overcome. The religious scruples should not be a barrier when it becomes fully known that there is nothing in the Christian Scriptures either enjoining burial or forbidding cremation, and the preference for the former custom among the early Christians is easily intelligible on grounds quite independent of and apart from religious conviction.

DR. ALBERT N. BLODGETT said: In replying to your courteous request for my views upon the subject of cremation, I would

state that I am in favor of this method of disposition of the bodies of the dead, for the following reasons: First, the processes of natural dissolution in the earth are but a slower form of decomposition than that which is effected by cremation, and except in respect to time, the processes do not materially differ. Second, the aggregation of large numbers of the dead in cemeteries is a more or less serious menace to the health of those persons who reside in the immediate vicinity; and in the neighborhood of large cities this may at any time become manifest. Third, there is nothing repulsive in the idea of cremation, in relation to the slow process of decomposition which the body must undergo if placed in the ground in the ordinary manner. Fourth, the possibility of infection from the bodies of the dead, particularly in the periods of epidemic ravages, is excluded, as the virus or germ of communicable disease is effectually destroyed by the process of cremation. Fifth, the expense attending the cremation of the body is materially less than that resulting from the ordinary methods of burial, and may be made to correspond in a great measure to the means of the family or friends of the deceased. The question which is most frequently raised in relation to cremation is one of sentiment, and concerns the feelings and emotions of surviving friends rather than the demands of necessity in relation to the dead. From this point of view, there can be no doubt that there is a growing conviction that cremation is not only not inhuman nor unkind nor heathen in its nature, but that in this way the processes of lingering natural dissolution are only kindly hastened. The feeling that cremation is in any way an evidence of disrespect or irreverence to the departed is now well nigh obsolete, and the community at large is no longer shocked by the idea. In favor of cremation it may be added that there is nothing of the gruesomeness attending the disposition of the remains of a loved one in the earth, where any association with the place must be combined with the thought of corruption, of human decay, and of the sickening processes which are there taking place. From a pecuniary point of view, cremation has much in its favor, for while the cost of ordinary burial is continually increasing both in regard to the spot chosen for interment, as well as in the expense attendant upon the funeral services and customs, the cost incurred by cremation is not large, and the demands upon

the resources of the often already impoverished family are not so great, and may indeed be made quite small. In one of the crematories visited by the writer, there is no exhibition of iron coffin or other fireproof material; the body is brought to the chapel in a portable casket, and is placed upon an ordinary catafalque, which at the proper time is silently drawn to one side, and the body is slowly propelled into a vaulted chamber, where the process of cremation is carried out by means of reverberatory heat without the contact of the direct flame. The process is complete in about two hours. There is another point of view from which cremation should be regarded with more consideration than has usually been accorded to it, and that is, as a means of protection from living inhumation. In many instances it is on record that the bodies of persons supposed to be dead have afterward been found in such a condition that the horrible fact was established that the bodies had been placed in the ground before life was extinct, and that the persons had revived after burial, and had suffered untold agonies before death finally came to their relief. This consideration alone should have some weight with those who have opposed the idea of cremation, as it alone of all forms of disposition of the dead, offers absolute immunity from this most appalling accident. An autopsy should in all cases precede cremation, and in this way the public has a double protection against possible living burial, in the added care which their repeated examination would secure. No official would make a *post-mortem* examination in any case without first satisfying himself that all possibility of life in the subject was excluded, and if by any chance the person should not be dead, efforts at resuscitation might still be successfully instituted.

THE NICARAGUA CANAL.—Test borings recently made on the line of the Nicaragua Canal show that the entire divide to be traversed by the deep cut consists of solid basalt, at least to a depth of 165 feet, as far as the borings extended. This is a most favorable showing for the construction company, as it settles at once the important question of slopes in the greater part of the cut.—*Science*, Jan. 17, 1890.

THE USE OF THE DIGESTIVE FERMENTS.

BY H. H. RUSBY, M. D.,
NEWARK, N. J.

The progress of medicine during the past decade has been in the direction of profound investigation and brilliant discoveries in pure science, rather than in that of assisting us in our practical treatment of disease. It is true that extensive improvements have taken place in bedside treatment; but this has been rather due to the increased dissemination of past information by means of the Medical Press, and a closer association of physicians in societies like our own, than to the application of discoveries really new. The most careful study of the subject of bacteriology, for instance, fails to discover, as yet, practical benefits at all commensurate with the amount of study that has been bestowed upon it. We have been induced by it to become more cleanly, and that is about all. So with much of the theoretical work that has been done. Representing the highest talent, the most devoted effort and the most admirable results, it has yet fallen short of its practical object, except, as I have remarked, in elevating our own individual standards of study and care.

Among the exceptions to this general rule none stand out more prominently than the artificial digestive ferments. A quarter of a century or so ago, pepsin and pancreatin were little more than pharmaceutical curiosities, the use of which, when they were used, was not based on sound information and rational principles, and resulted in little advantage to the public. Indeed, the products themselves, at that time, were not such as to command confidence, or effect any special result. Imperfectly freed from their associated organic matters, they were ill-smelling and nauseous, and of very feeble digestive power. To-day all this is changed. Comparative perfection has been reached in the products themselves. We have an infinity of beautiful and elegant preparations, and effective combinations, both solid and liquid, in powder and scale, and representing a uniform digestive power ranging from 500 to 2000, exceptional samples having been produced with a digestive power of 3500. That is to say, one grain of the pepsin is capable of digesting 3500 grains of coagulated egg albumin. Great as has been the advance in the character of the preparations,

the advance in their intelligent use has fully kept pace therewith. Their consumption has become simply enormous. And yet even now there are many physicians who dispense with their use altogether, while by many others they are used merely because it is the fashion. If asked for a candid opinion, these physicians will admit that they have been disappointed in the results obtained. I have no hesitation in saying that in all such cases the fault lies, in one way or another, with the physician himself. Properly used, the action of the digestive ferments possesses all the certainty and exactitude of a chemical combination.

Failure in their use may be attributed to three sources of error. First, to the selection of an improper preparation; second, to an unscientific combination; third, to a method of application not in conformity with the principles upon which they act.

My object this evening is not to point you to those preparations which I believe to be the best, but to discuss the nature and action of the substances, and to deduce therefrom the means by which you can readily inform yourselves as to the comparative value of any preparation which may be offered. I need only refer to the character and functions of these substances as they occur naturally in the human system.

You are all of you familiar with the fact that ptyalin, the digestive element of the saliva, possesses the power of converting starch into sugar. As to the relative importance of its action, authorities differ greatly. It is urged on the one hand that as it requires an alkaline condition for the performance of its work, and as its action ceases within 15 minutes of its entrance into the stomach, its function is unimportant. On the other hand, it is argued that its operation is almost instantaneous, and that 15 minutes is sufficient time for it to accomplish important results. However, it does not form one of the artificial digestive ferments, so we may dismiss it from consideration. The digestive constituent of the gastric juice is pepsin. This pepsin is aided in its action by the acid associated with it. Such assistance is rendered in two ways: in the first place the acid possesses in itself the power of softening the albuminous substances, and preparing them for the action of the pepsin.

Second, the acid condition produced by its presence is an indispensable necessity for the action of the pepsin itself. Too much

stress cannot be laid on this fact. If you render the condition of the stomach and its contents alkaline, you effectually prevent every possibility of digestive action by the gastric juice. Not only so; if the mass be neutral in reaction, or even if it be only feebly acid to test paper, the process of digestion is checked. A certain quantity of free acid must be present. As to what the acid is, opinion differs. It has long been supposed to be identical with hydrochloric acid. The fact, however, is not important, inasmuch as there are a number of the acids which work almost equally well. The action of pepsin is upon the albuminous substances exclusively, converting them into peptones. It also possesses the power of coagulating milk, but there its action ceases absolutely. The actual digestion of the milk is left for the intestinal processes.

The chief digestive principles of the pancreatic juice are pancreatin and trypsin. The functions of these two principles are very distinct. That of pancreatin is to digest the starches, converting them into sugar, and to form an emulsion—the most perfect known to science—with the fats. That of the trypsin is to complete the work begun by the pepsin in the stomach, namely, the digestion of the albuminous substances. It is obviously impossible to take up these physiological processes in the present paper. It is sufficient to say that throughout them, an exactly opposite condition must be maintained to that necessary for stomach digestion. Their most perfect performance calls for an alkaline or neutral condition. Such a condition, however, is not always clearly present. An acid reaction is often exhibited by the mass, when in reality no free acid is present, a loose combination existing. In such instances the pancreatic digestion proceeds unimpaired.

The application of trypsin in its pure form to intestinal digestion has not gone beyond the experimental stage. In discussing this process, therefore, I shall confine myself to the action of pancreatin.

Taking up first the subject of pepsin we may establish certain requirements as to the character of the preparation.

First, it must have no bad odor. This rule is based on obvious principles. Pepsin possesses a distinct and peculiar odor of its own. Any odor which is added to this must be due to the presence of foreign matter. Such matter must weaken the efficacy of the pepsin in exact proportion to the extent to

which it is present. But there is a far more serious evil than a mere want of efficacy. Such a preparation is positively injurious, if not dangerous. The adjective "pure" as applied to pepsin possesses an entirely different construction from what it does as applied to an ordinary chemical substance. Absolutely pure pepsin has never yet been produced; it is impossible by any process now known to free it perfectly from its associated matters. The term is therefore used only in a relative sense. It means that it has been purified so far as the process is possible, and that no adulterating or modifying substance, such as milk sugar, has been added to it. There must therefore be more or less foreign matters connected with the very best of pepsins; but if such foreign matter be in excess, or if it represent animal substances liable to decomposition, then we get a real danger of sepsis. That such a danger is not imaginary is proven by the accounts which reach us from time to time of fatal blood poisoning resulting from the absorption of septic matter contained in the pepsin, through the agency of raw or ulcerated surfaces in the digestive tract. The presence of such septic matter is best indicated by the possession of a putrescent odor.

Second, the pepsin must be stable in its composition. There are pepsins which, possessing a high degree of digestive power when recently prepared, rapidly deteriorate, until within a year from the time of their preparation, they have scarcely any digestive power.

Third, pepsin to be used with the greatest amount of benefit, should be as nearly pure as it is possible to obtain it. The plan of producing lactated and saccharated pepsins and the like has no advantage except that where we desire to give a small dose, we can more readily estimate it by dividing a powder whose bulk has been increased by such additions. But the corresponding disadvantages more than offset this slight advantage. From an economical standpoint, moreover, it is decidedly to the disadvantage of the patient to purchase these preparations.

Fourth, and perhaps most important, the pepsin must contain no peptone; to mix a peptone with a pepsin, or to use a pepsin which has not been freed from any peptone which might accidentally have become incorporated with it, is precisely as economical as it would be to mix a certain amount of coal ashes and clinkers with the coal you desire

to burn in your furnace. It is the office of pepsin to act upon albuminous substances in such a manner as to convert them into soluble peptones; this is the very process of digestion. If, now, a peptone is present, you have not a substance capable of doing this work, but, on the contrary, you have the product of such work already performed, and to just the extent to which such peptones are present your product is ineffective. There is, however, this difference between the case of the ashes in the coal and that of peptone in your pepsin. The former is not at all dangerous to the safety of the occupants of the house, but to your patient, the presence of these peptones, particularly after they have been allowed to go on to a state of decomposition, possesses all the danger to the patient which a good surgeon attempts to avoid by the employment of antiseptic precautions.

Finally, I may say that it is a mistake to believe that a pepsin does any better work because of its being freely soluble. It is more convenient to use, but the stomach will make an equally good use of it, even if it be insoluble in water. It is to be remembered, however, that in this case the presence of mucus is indicated, so that the pepsin is less pure and therefore less active.

How, now, are we to decide as to the value of the host of pepsins upon the market? All of them may, for convenience of discussion, be comprised under three heads. First, those which are copyrighted, patented or otherwise protected, or which are made by houses which resort to these methods. Of such preparations and of such manufacturers, it is safe to say, that they are the most deadly foes with which the honorable and conscientious physician has to contend. Every man who is concerned in the preparation of a proprietary medicine is seeking to rob every one of you of your rightful living, and your treatment of him should be adopted in accordance with these ideas. Yet it is the rarest thing in the world to meet with a physician who is not assisting one or another of the sharks, to his own destruction and that of his fellow-practitioners.

Secondly, one-half of all the digestive agents advertised to-day, perhaps I would say two-thirds, are wholly inert or so nearly so as to be practically worthless. It matters not what testimonials are brought forward in favor of such preparations. For example, I may cite the case of the company preparing

Lactopeptine. This company, with a capital investment at no time exceeding \$30,000, divides an annual cash profit of more than \$200,000, and issues two dividends monthly. A very great part of this large sum is obtained at the expense of the practitioner; for, in spite of all denials, these preparations are purchased very largely by the laity. But it is even a greater injustice to the public, as its digestive power is scarcely perceptible by means of any scientific tests which can be applied to it. Lactopeptine, ingluvin, peptonix, and digestiline, so far as science is able to determine, possess no digestive power. Their authors seek to promulgate the idea that it is possible that digestion does not proceed the same within the body as it does in experiments conducted outside of it. But this is a perversion of facts. Such a statement can refer only to temporary and accidental states or conditions. As a rule, human digestion proceeds strictly in the line of artificial digestion under careful scientific management.

Of the remaining one-third or one-half of the digestive agents which are offered to us, it becomes important that we should select the purest and best; how shall we accomplish it?

First, the presence of putrefaction may be easily detected by leaving the sample exposed for some time to the atmosphere, and then testing it by the mere sense of smell.

Second, the presence of peptones may be detected in a moment or two by a very simple test. All pepsins contain a trace of peptones, but it should be very slight indeed.

Third, an accurate decision as to the most active preparation is only to be rendered at the expense of a little time and care. If there be any duty on the part of a physician the proper performance of which will be richly rewarded, both in the interests of his patient and in their increased confidence in him as their medical adviser, it is the devotion of a few hours to the settlement once and for all of this important question. If, however, it be, or seem to be, impossible for him to find the time necessary for the performance of this test, then let him by no means fail to reinforce any claims that may be presented, with the decision of some eminent and fully qualified authority. To us, as physicians, it may seem strange that any man moving in respectable society should deliberately make a statement to the effect that "recent tests have clearly established

the superiority of his preparation over all others" when he is at the moment fully conscious that it is only $\frac{1}{8}$ or $\frac{1}{6}$ as strong as those of half a dozen other makers. Yet this thing is done daily by manufacturers. As I stated in the beginning of my paper, it is not my intention to refer favorably or unfavorably, this evening, to a single product specifically; but I do assure you that some of the most inert products to which I refer are brought forward with the most unblushing claims as to their great superiority. It is, therefore, folly to trust in any advertised statements whatever, unless they be backed by some authority upon whose ability and integrity you can fully rely.

The test, then, which I would recommend as the only really practical one at your command, is as follows: The strongest preparation of pepsin which it has been found practicable to prepare by modern pharmaceutical processes, and for commercial purposes, is one, one grain of which is capable of digesting two thousand grains of coagulated egg albumin. This then may be taken as a standard, and we may proceed with our test based upon this ratio. In a bottle containing 11 ounces of water, acidulated with 50 drops of hydrochloric acid, place 500 grains of coagulated egg albumin, prepared in the following manner: A pin-hole is to be made in each end of the eggs, which are to be boiled for 15 minutes. The shell is then removed, and the white carefully separated from the yolk, any adherent portions of the latter being removed by washing with cold water. With a soft towel the pieces are then carefully dried, after which they are passed through a sieve containing 30 meshes to the linear inch. The required amount is then weighed and placed in the bottle together with $\frac{1}{4}$ of a grain of the pepsin to be tested. One-fourth of a grain of pepsin to 500 grains of albumin gives us a ratio of one to two thousand. The substance is then carefully kept at a temperature of 104° F. for 4 hours. The amount of undigested albumin remaining at the end of this time is an indication of the comparative inability of the pepsin to answer the required test.

Similarly, we may establish the strength of any preparation of pancreatin by testing its power to digest starch. A given amount of pure starch is to be hydrated and mixed with a weighed quantity of pancreatin. The pancreatin may be either in a liquid or dry form. In either case, upon mixing it, the mass is instantly liquefied and a clear

solution results. After a short time sugar begins to form and can be discovered by the ordinary tests.

Having now selected our preparation I would add a caution or two in reference to the mode of prescribing it. The physician who combines carbonate of soda, potash and similar alkaline substances with his pepsin, pursues just as irrational a course as would your servant girl in soaking her kindling wood with water before attempting to build the fire with it. In other words, he adopts the most effectual process known for preventing digestive action. And it is not to be forgotten that this alkali once added, the power of the pepsin is gone forever. No subsequent addition of an acid can restore it. It is perfectly proper to administer an alkali some little time before eating, as it tends to promote the flow of the gastric juice. But to combine such a substance with the digestive agent, and at a time when digestion is in progress, is the greatest error which could possibly be made. Similarly, it has been found that more or less injury to the digestive process is caused by the presence of corrosive sublimate, quinine, tincture of the chloride of iron and saccharine. No harm is produced by the addition of willow charcoal, sub-nitrate of bismuth, or the ammonia-citrate of bismuth. The ordinary drugs have nearly all been tested as to their effect upon the action of pepsin, but I must refer you to treatises upon this subject. It is the general opinion that pepsin is best administered within half an hour after eating.

The use of pepsin is indicated only by an inability on the part of the stomach to digest albuminous substances. To exhibit pepsin for the purpose of aiding in the digestion of starches and fats is to fail in appreciating its office. Its amount likewise must be proportioned to the amount of albuminous substances which have been digested, and to the comparative ability or disability of that particular stomach to do its work. There is therefore no dose designated; an intelligent application of the dose to each individual case becomes one of the niceties of medical practice. It is not to be supposed from this that a given amount of pepsin actually unites with the given amount of albuminous material to form the peptone. As a matter of fact, the pepsin is not used up in the process. It acts by its presence alone; and after it has digested

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one lot of food, if it still remain in the stomach, an additional portion might be digested simply by supplying the necessary amount of hydrochloric acid, this substance having been consumed in the previous digestive act. Any excess of pepsin is quickly destroyed after leaving the stomach by the alkaline juices which it encounters.

The conditions for the administration of pancreatin are readily deduced from a consideration of its nature and functions. It is to be given chiefly for the purpose of aiding in the digestion of fats and starches. While it does not, strictly speaking, digest the fats, it produces with them so fine an emulsion as to greatly aid in the further intricate processes to which they are subjected. Its action upon the starches, converting them into sugar, is perfectly simple.

Finally, its power to digest milk is scarcely less important than is its action upon the starches. While the gastric juice possesses the power of curdling the milk immediately upon its entrance into the stomach, no further action is thereby exerted upon it. It passes on into the intestine, becomes alkalinized through the action of the bile, and in this condition is prepared to be acted upon by the pancreatin.¹

Should it, however, pass the stomach without becoming curdled, the pancreatic juice also possesses the power to accomplish this result. In this condition, it is readily and promptly digested by the pancreatin present. One of the indications, therefore, is that pancreatin should never be prescribed with an acid; but on the contrary it is even necessary to add a certain amount of alkali in order to insure its passage through the stomach without becoming destroyed by the gastric juice which may be there present. Various devices, some of them quite ingenious, have been proposed in order to accomplish this result, but none of them have been perfectly successful. It may be partially accomplished by administering pancreatin with an alkali some time before the digestion of a meal. A much better plan is to omit its administration until stomach digestion is pretty well concluded, and the stomach has temporarily lost its power to

secrete the acid gastric juice. The exhibition of pancreatin is attended with almost insurmountable difficulties, so that it may be doubted if its use is at all practicable in the present state of our knowledge, and by any at present known processes. As I have said, the acid of the stomach, unless counteracted, instantly and permanently destroys its power. On the other hand, any but a very small amount of alkali also checks its action, and a large amount destroys it almost as effectually as does a free acid. Thus we stand, as it were, between Scylla and Charybdis, and know not which way to steer.

A third method, and by far the most advisable, except that it is apt to render the food somewhat unpalatable, is by digesting it before it is taken into the stomach. This method is especially applicable to milk. The most sensitive stomach, unable under natural conditions to use this important article of food, will assimilate it in the most perfect manner, if it be first mixed in the proportion of $\frac{1}{2}$ pint, with 15 grains of bicarbonate of soda, and 5 grains of pancreatin, and allowed to stand at the body temperature until a slightly bitter taste has been developed. The process must then be immediately checked by immersing the vessel containing it in cold water, and the food taken within a few hours. If the bitter taste is found very objectionable, it may be masked by properly flavoring.

I feel that this paper would be far from complete without some special reference to the effect of these digestive agents in dissolving the false membranes of diphtheria and membranous croup, if, indeed, which is more than doubtful, these diseases are distinct. Their use for this purpose seems so rational and scientific that we may well wonder that it did not become altogether general many years ago. The explanation is to be found in the imperfect nature of the preparations until within a few years. Even the best of them was not uniform in strength, varying greatly with the different lots prepared, as well as with their age. Had we possessed 100 years ago, the powerful, uniform, and stable preparations of pepsin with which we are blessed to-day, their application to these deadly diseases might have resulted in the saving of hundreds of thousands of human lives.

The mode of application in these cases should be just as rigidly subjected to scientific surveillance as for the purpose of digestion. I cannot do better than to quote

¹ I find that this is understood as saying that pepsin has not the power to digest the caseine of milk. It has such a power, but it does not get an opportunity to exert it beyond the curdling process, as the milk quickly passes out of the stomach, and under the influence of the pancreatic juice. Practically, therefore, the digestion of milk takes place in the intestine.

from a valuable paper on this subject by Dr. A. J. C. Saunier, *Western Med. Reporter* for Oct., 1888. Three substances have been used for digesting the false membranes of these diseases. They are papayotin, trypsin, and pepsin. I heartily confirm the Doctor's opinion that the first of these, papayotin, possesses but little value. While in a natural condition the juice of the paw-paw possesses a remarkable digestive power; no preparations thereof have been found which retain this power to a reasonable degree.

Trypsin possesses a fair degree of power, but its use is somewhat impracticable for the reason that, being an ingredient of the pancreatic juice, it requires an alkaline condition for the performance of its work. Such an alkaline condition is very difficult to maintain upon the highly acid surface of the diphtheritic exudation.

Such a condition can be produced by frequent spraying; but this is found exceedingly annoying to the patient. The employment of pepsin, therefore, is on all accounts to be preferred. For this purpose the strongest possible form of pepsin should be employed, and it is here highly important that it should be freely soluble. A saturated solution being prepared, it may be applied either in the form of a spray or by means of a sponge. It should be used freely every one, two, and three hours, according to the case, the dissolution of the membrane requiring only from 15 minutes to half an hour.

I feel that I cannot close this subject without communicating to you some recent discoveries as to the nature and action of diphtheria, with which some of you may not yet have become acquainted, and which seem, to my mind, to be well established. It has been found that diphtheria acts in two ways in the production of its fatal results. The bacillus under no circumstances permeates the system. Its development and location are purely local, upon the surface of mucous membranes. These produce their effects by mechanical means. Here they generate, by the breaking up of the albuminous matters with which they come into contact, the deadly ptomaine which become absorbed in the system, and effects its work by means of poisoning. That death, then, can be caused through the absorption of sufficient amount of the poison generated, without any reference to the amount of membranous derangement present, might be inferred. But infer-

ence is not called for. The fact has been clearly demonstrated. A solution in which the bacteria had been allowed to develop freely, having been filtered through unglazed porcelain, so that all bacteria were removed from it, was then introduced into the system of a healthy subject. As a result the characteristic symptoms of diphtheria very shortly presented themselves, ran their course, and produced paralysis and death, yet without the production of one single individual of the bacillus of the disease.

CLINICAL OBSERVATIONS OF THE PRESENT EPIDEMIC.

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The present epidemic seems to be a combination of the ordinary "cold," which is no doubt aggravated by the unfavorable atmospheric conditions, and the so-called influenza, but it is not the disease which we are accustomed to designate as influenza, possessing, as it does, many symptoms and characteristics entirely different from those found in that disease, and requiring a decided change in the treatment usually followed in such cases. It is not such a new disease as is commonly supposed, for I have recognized and treated cases in this city and surrounding country during the last four years. It has not been confined to this city or its surroundings alone, but has existed in different sections of this country for that length of time. Now that the cases are so numerous, attention has been drawn to it, and its infectious character realized; but, in the majority of cases it has not been differentiated from influenza, recognized under its varied manifestations, nor has it been properly treated. Last year, I read a paper on this same disease before the American Medical Association at Newport, which was afterwards published in the *MEDICAL AND SURGICAL REPORTER*, Aug. 3, 1889. Dr. W. C. Glasgow of St. Louis had made, at that time, similar observations, and had read an exhaustive paper on the subject before the American Laryngological Association at its last meeting in Washington. Since writing

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the above-mentioned paper, I have observed many cases representing different types of the same disease, possessing the diagnostic symptoms, and being amenable to the same specific treatment. I do not believe that the disease is identical with that called "La Grippe," which is now epidemic in Europe.

In one city or town a certain type of the disease may predominate, in one section of the same city or town one set of cases, representing one type, may be found, and in another section, a different one. For a disease which has not yet been named, it is not to be expected that we can state its etiology. Further observations are necessary before the cause can be determined. It is certainly infectious, but not contagious. One attack does not secure immunity from a second or third seizure. In fact, the disease is prone to recur a second, or even a third time, either before health is completely restored or subsequently.

The attack begins without a chill. Often there are chilly sensations, but I have not seen a case in which there has been a chill. Headache is constant and usually severe. In that type of the disease in which the upper respiratory tract is affected, the headache is usually frontal and orbital. In the other types of the disease the pain in the head is frequently not localized. The temperature is elevated from the first, and generally high, sometimes reaching 104° or 105° . A characteristic feature is that the temperature is highest at midnight, and lowest in the morning and evening. Frequently when this nocturnal temperature descends, the patient, in the early hours of the morning, finds himself in a profuse perspiration. The relation of the pulse to the temperature is peculiar. Even with a temperature of 104° to 105° , the pulse is not over 100, and, in most cases, the rapidity is normal. The character of the pulse varies, being sometimes full and bounding, especially when the temperature is at the highest point, and, at other times, it is weak and compressible, but in the majority of cases, its character, like its rapidity, is nearly normal. The tongue is moist, and has a light, yellowish-white coat, the tip and edges are clear. When not coated, the tongue is soft and flabby, and its sides show indentation of the teeth. The patient does not complain of thirst. There is anorexia, in most cases aversion to food, although there may be hunger. The feeling of ma-

laise, the general depression, and weakness are out of proportion to the gravity of the general symptoms. The patient loudly complains of the severe pain in the back. Muscular soreness and pains in the joints are common symptoms.

There are three types in which the disease manifests itself; first, when the mucous membrane of the upper respiratory tract is affected; second, when the disease attacks the mucous membrane of the lower respiratory tract; third, when there is entire absence of any symptoms pointing to the air-passages, and we find merely abdominal symptoms, simulating typhoid fever. If the disease is located in the upper air-passages, there is congestion of the mucous membrane of the nasal and naso-pharyngeal cavities, increased secretion, and partial occlusion of the nasal cavities. Conjunctivitis and increased lachrymation. Persistent sneezing and redness of the eyes, which is so characteristic of influenza, are not so common as they were in those epidemics called "Epidemic" and "Pink-Eye," occurring a few years ago. Occasionally there is ear-ache, from extension of the inflammation to the Eustachian tubes and to the middle ear. In some cases, although the nasal and conjunctival congestion may be absent, there is hyperemia of the retina. Enlargement of the submaxillary and parotid glands is common. There may be an absence of symptoms referring to the nose and eye, and in the pharynx there will be found a mucoid infiltration of the sub-mucous tissue, and the formation of thin, white, pseudo-membranous patches on the surface of the mucous membrane. These pseudo-membranes gradually melt away without there being the characteristic odor of diphtheria. There is no albumin in the urine.

When the disease is localized in the lower respiratory tract, there is hoarseness, pains in the chest, and a dry, rasping cough. Physical examination reveals only an occasional sibilant râle. In old persons, in the debilitated, and in feeble children, pneumonia and capillary bronchitis may exist as complications.

In the third type of the disease there may be a complete absence of symptoms involving the respiratory tract, and the disease may simulate typhoid fever. I saw about fifty cases of this kind, occurring in the practice of another physician, in a town near this city. There was considerable alarm, as the disease had been called typhoid

fever, and it was feared that there was an epidemic of that disease. On investigation I found that it was not typhoid, but the disease under discussion, and that when the proper treatment was instituted, the patients recovered in a few days, whereas, under the treatment which they had been having, the disease continued two or three weeks. Those who were found coming down with the disease, and who were placed immediately under proper treatment, recovered in 48 hours.

The remedies usually prescribed have either no effect upon the disease, or seem to increase the severity of the symptoms. Quinine should not be given. The disease is not malaria, and quinine has no influence on the temperature in these cases. I have found no benefit from antipyrin or antipyretics of that class. Dr. Bartholow, in the *Medical News* of Dec. 28, 1889, recommends the inhalation of sulphurous acid fumes, by the burning of sulphur in the patient's apartment. The inhalation of this gas, even when the mucous membrane of the upper air-passages is in a normal condition, as every one knows, is extremely irritating, how much more so must it be when congestion exists. It should, therefore, not be used.

The patient should be put to bed, and kept there until his temperature is normal, as he is better off in bed, on account of the weakness and depression. To an adult, ten grains of benzoate of soda should be given in half a wine-glass of water every two hours. The diuretic effect of this drug can be seen after a few doses have been administered, and it has a marked effect upon the temperature, bringing it down to normal more quickly than anything which can be given. A tablespoonful of whiskey should be administered every four hours. In those cases in which the catarrhal symptoms are prominent, washing out of the nasal cavities by sniffing up or spraying with antiseptic solution made according to the formula published by me in a paper in the *Medical Record* some time ago, affords considerable relief. Under this treatment the patient usually recovers in two or three days, but under other methods of treatment, the disease is apt to become chronic, and continue weeks and even months. It has a great tendency to relapse, and finally to become chronic, if not checked in the beginning.

The following comparative tables of symp-

toms will give a clear idea of the difference in the symptomatology between the three forms of this disease and influenza or la grippe, pneumonia, and typhoid fever:

TYPE IN WHICH THE UPPER RESPIRATORY TRACT IS INVOLVED.

INFLUENZA OR LA GRIPPE.	PRESENT EPIDEMIC.
1. Chills or chilly sensations.	1. No chill, but neuralgic pains mostly in back and head.
2. Malaise.	2. Great depression.
3. Not much fever. Temperature highest in the afternoon.	3. Temperature usually high from the first. Lowest in the afternoon, highest at mid night.
4. Pulse variable, but increasing in rapidity as temperature rises.	4. Pulse out of proportion to high temperature. Not rapid. Never above 100.
5. Thirst, if there is much fever.	5. No thirst.
6. Tongue slightly coated, and dry if temperature is high.	6. Tongue coated in centre, sides and tip clear, but always moist, even at a temperature of 104°-105°.
7. Sneezing, conjunctivæ congested, increased nasal secretion, frontal headache.	7. Sneezing not so persistent, conjunctivæ not commonly found congested, increased nasal secretion, frontal headache, congestion of retina.
8. No membrane in pharynx.	8. Thin white pseudo-membranes on surface of mucous membrane of pharynx, found in a certain set of cases.
9. No tendency to return after restoration to health.	9. Tendency to a second or third attack.

TYPE IN WHICH LOWER RESPIRATORY TRACT IS INVOLVED.

PNEUMONIA.	PRESENT EPIDEMIC.
1. Chill.	1. No chill.
2. Pain about nipple.	2. General soreness of intercostal muscles, severest pain in back and head.
3. Temperature high at first, without fluctuation, gradually developing into an intermittent rise and fall morning and evening, and finally becoming normal.	3. High temperature from beginning, without much fluctuation, highest point in middle of night.

Jan. 4. Rapid increase in temperature. 5. Delirium. 6. Course from beginning to termination. 7. Physical signs in lungs. 8. No tendency to relapse. 9. Type in which the lower respiratory tract is involved. 10. Typhoid fever. 11. Patient complains of backache before onset. 12. Chills and rigors. 13. Headache, backache, and general malaise. 14. Tongue coated and dry. 15. Tenderness of gastric region. 16. Stools. 17. Diarrhea. 18. Rose spots. 19. Temperature morning and evening. 20. Pulse rapid. 21. Thirst. 22. Delirium. 23. Termination or alleviation. 24. Sometimes. MEDICAL There a United States \$5.00 per is also we sh male pl

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4. Rapidity of pulse coincides with rise of temperature.

5. Delirium common.

6. Course of disease is from 5 to 9 days. Termination by crisis.

7. Physical signs found in lungs.

8. No tendency to repeated attacks.

4. Rapidity of pulse is not increased to any extent, irrespective of height of temperature. Never above 100.

5. Delirium rare.

6. Under proper treatment does not continue over 3 days. Does not terminate by crisis.

7. Absence of physical signs except interrupted respiratory murmur in capillary bronchi.

8. Tendency to a second or third attack.

TYPE IN WHICH ABDOMINAL SYMPTOMS ARE PROMINENT.

TYPHOID FEVER.	PRESENT EPIDEMIC.
1. Patient usually complains several days before giving up.	1. Onset sudden.
2. Chills or chilly sensations.	2. No chill.
3. Headache, pain in back, epistaxis occasionally.	3. No epistaxis, neuralgic pains, mostly in back and head.
4. Tongue coated, brown and dry.	4. Tongue coated in centre, tip and edges clear, yellowish-white and moist.
5. Tenderness in epigastrium and tympanitis.	5. No tenderness. No tympanitis.
6. Stools clay colored.	6. Stools brown or yellow.
7. Diarrhoea usually.	7. Constipation usually.
8. Rose spots.	8. No eruption.
9. Temperature high morning and evening.	9. Temperature low morning and evening.
10. Pulse rapid.	10. Pulse slow.
11. Thirst.	11. No thirst.
12. Delirium common.	12. Delirium rare.
13. Termination—death or slow convalescence.	13. Rapid recovery or chronicity.
14. Sometimes relapses.	14. A tendency to a second or third attack, even after restoration to health.

MEDICAL WOMEN IN THE UNITED STATES.

There are over 3000 medical women in the United States, whose income is said to range from \$5,000 to \$20,000 a year. The number is also steadily increasing, so that in time we shall probably have as many female physicians as male physicians.

PERISCOPE.

Infantile Diarrhoea.

At a meeting of the Harveian Society recently, Dr. Luff read a paper on the antiseptic treatment of infantile diarrhoea. He spoke highly of Dr. Illingworth's treatment, which consists in the administration of 1-50th of a grain doses of the biniodide of mercury dissolved in iodide of potassium, combined with 1-grain doses of chloral hydrate. The biniodide possesses the property of combining with and rendering the milk ptomaine tyrotoxinon insoluble. Of eighty cases of acute infantile diarrhoea treated by this method, the diarrhoea ceased within two days in seventy-two of the cases, in five out of the remaining eight cases it ceased within four days, and in no case did it last over seven days.—*Chemist and Druggist*, Jan. 4, 1890.

Administration of Castor Oil.

Castor oil is a drug which has not yet been, and is not likely to be, altogether supplanted by its more modern rivals; nevertheless, it has been found that patients often decline to take it, and choose some more palatable but less efficient substitute.

The best way of taking castor oil is thoroughly to mix the dose with about four times as much hot milk,—this is most effectually accomplished by shaking the two together in a bottle which they do not more than half fill. When taken as above directed, the activity of the oil appears to be increased, and, being rendered very limpid by the hot milk, its oily nature is not perceived. Children take it very readily in this form, in which, indeed, it is scarcely distinguishable from rich milk.—*Bristol Med.-Chirur. Journal*, Dec., 1889.

Uremia as a Sequela of Diphtheria.

Although uremia is not commonly recognized as a possible consequence of diphtheria, it is occasionally found occurring in this way, and Dr. J. Cassel has recently reported in a German journal, devoted to the diseases of children, two cases which were met with in Dr. Baginski's polyclinic. The first was that of a little girl nearly five years of age, whose urine had contained blood and a considerable quantity of albumin from the fourth day after the commencement of

the diphtheria. Death took place on the thirteenth day from uremic convulsions and dropsy. Shortly before death the child became paralyzed on the right side. At the *post-mortem* examination, parenchymatous nephritis and œdema of the pia mater were found, but no anatomical cause for the hemiplegia could be detected. The second case was that of a little girl of three years of age. Here not only the throat, but the vulva was affected by the diphtheria. The local disease passed off, and the child was apparently recovering when on the eighteenth day the secretion of urine suddenly diminished very markedly, and albuminuria and convulsions came on. Death occurred two days afterwards. At the *post-mortem* examination it was found that there had been in the first place parenchymatous nephritis, and that this had been accompanied by glomerulonephritis. There was also fatty degeneration of the heart.—*Lancet*, Jan. 4, 1890.

Oxidizing Dentifrice.

Gawalowski recommends the following as a very efficient dentifrice, innocuous to the enamel of the teeth:

Cuttle-fish bone q. s.
Peroxide of hydrogen, 4 per cent. . q. s.

Mix the powdered cuttle-fish bone with the peroxide to form a stiff paste, and use this for brushing the teeth, which gradually become bleached.—*Zeit. Oest. Ap. Ver.*

The Effects of the Electric Current on the Female Generative Organs.

It is only a few years since the application of electricity as a therapeutic agent had almost entirely fallen into the hands of quacks. Apostoli has, by his energetic efforts, prominently brought electric therapeutics before the profession and the public, as applied for the treatment of uterine fibroids. Recently, Dr. W. K. McMordie, of Belfast, has made a number of experiments relative to the effects produced by the current in case of uterine fibroids, and in uterine hemorrhage where the cause was obscure. He applied it as follows: One pole attached to a conductor in the form of a uterine sound was placed in the uterus, and the other to a flat conducting surface, was

placed over the abdominal parietes corresponding to the fundus uteri.

He found two effects when the current was applied from ten to twenty minutes. When the external os uteri was small it dilated; and, in a considerable proportion of the cases in young females, the sexual orgasm was distinctly produced. It had no effect either on the fibroids or the hemorrhage. So frequently was the sexual orgasm produced that Dr. McMordie gave the treatment up in disgust. It made no difference whether the positive pole or the negative pole was inserted in the uterus.—*Medical Press and Circular*, Jan. 1, 1890.

Senile Articular Changes in Joints and Rheumatoid Arthritis.

Dr. Kasanli has published an account of some microscopical observations he has made on the morbid changes of the various structures of the knee-joint which accompany old age, with the view of comparing these changes with those occurring in rheumatoid arthritis or arthritis deformans, as this affection is frequently called on the Continent. The morbid changes found in the synovial membrane were most marked in the adventitia, and consisted in hyperplasia of the cellular elements and the development of connective tissue in the adventitia, together with thickening of the walls of the capillaries lying beneath the intima synovialis, also in a varicose enlargement of the capillaries, separation of adipose tissue in the synovial membrane, and in splitting of the adventitia into fibres. In the cartilages the cellular elements were found to be undergoing fatty degeneration, and the interstitial substance to have broken up into fibres, and to have become infiltrated with certain saline matters. In the spongy portion of the epiphysis of the femur the trabeculae had become very thin, and cavities had been formed by the absorption of the osseous substance of the lamellae, into which the bone near the cartilaginous covering had split up. In the medulla of the bone there was a marked deficiency of medullary elements, the vessels were affected by a varicose enlargement, and their walls were thickened. These changes, which occur normally in the knee joint in old persons, are, according to Dr. Kasanli, very similar to those found in rheumatoid arthritis.—*Lancet*, Jan. 4, 1890.

THE MEDICAL AND SURGICAL REPORTER.

ISSUED EVERY SATURDAY.

CHARLES W. DULLES, M.D.,

EDITOR AND PUBLISHER.

N. E. Cor. 13th and Walnut Streets,
P. O. Box 843. Philadelphia, Pa.

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The Editor will be glad to get medical news, but it is important that brevity and actual interest shall characterize communications intended for publication.

PERSONAL RIGHTS AND MUNICIPAL HOSPITALS.

In a case recently tried before one of the ablest Judges of the Court of Common Pleas of Philadelphia, the plaintiff claimed damages from the city, asserting that a physician, who attended him in the summer of 1888, mistook an attack of measles for one of small-pox, sent for the city ambulance and had him transported to the Municipal Hospital, which is provided for the care of small-pox patients and other persons suffering with contagious diseases. Here, the plaintiff claimed, the hospital physician made the same mistake as his own physician had made, and placed him in a small-pox ward where he contracted variola in fact, and where he languished for more than three months, leaving with a contraction of one leg which he attributed to the disease. At the

trial, Judge Thayer ordered a non-suit to be entered, because the claim was founded upon alleged negligence of one of the servants of the city—the physician at the hospital.

The termination of the case is in accordance with law, although it seems hard, on its face. But, an incidental reason why it is not so hard as it seems, is found in the fact that the plaintiff may be assumed to have gone voluntarily; because, the city has no right to compel a patient to go to the Municipal Hospital. The counsel for the plaintiff cited the Act of 1818, as authorizing the city to forcibly take to the Municipal Hospital a person suffering with an infectious or contagious disease; but Judge Thayer declared that the city cannot forcibly take people from their homes and carry them to the hospital; adding: "I would shoot a man who would come to my home for such a purpose."

It may be well to call the attention of physicians to this case, as we believe there is a prevailing misunderstanding in regard to the subject, and physicians may unwittingly be abettors of an outrage, in leading poor and ignorant patients to believe that they can be compelled to leave their homes against their wish and to be exposed to the risks incident to the removal and to the practical imprisonment in a place where contagious diseases are continually treated.

When a person afflicted with a contagious disease is, or seems to be, unable to secure proper care in his home, a physician discharges his full duty when he notifies the appropriate Health Officer of the facts, and—if he cannot attend him himself—commits him to the care of another physician. It is no part of a physician's duty to endeavor to serve the community by having such a person removed to the hospital for contagious diseases, if this involves any misrepresentation as to the personal rights of the patient.

We do not suppose that any physician would do such a thing, if he knew the law; but it cannot be doubted that it has been done over and over again by those who

thought they were well informed in regard to it.

It has been asserted that the late astronomer Proctor was killed not long ago by his foolish and needless removal from his hotel room to a hospital in New York, and there are probably no cities or large towns in the United States where persons have not been exposed to the risk of disease and death by a combination of errors of diagnosis with errors of law.

It is possible that the laws of other States than Pennsylvania may authorize forcible removals such as we have been discussing; but it would be well for physicians to make sure of their position before they become parties to what Judge Thayer stigmatizes as an outrage on personal liberty which would justify killing the representative of a city's health authorities.

DIAGNOSIS OF EARLY PREGNANCY.

Attention has been called to the subject of early pregnancy, in the Editorial columns of the REPORTER, several times during the past year. The signs of Hegar, Rasch, Jacquemier, and the "fat-bellied jug" sign, have been dwelt on especially as offering the practitioners skilled in making bimanual touch positive evidence of the existence of pregnancy, after the sixth week in a large percentage of cases.

In the *Southern Clinic* for Dec., 1889, Dr. C. Coleman Benson contributes a remarkable addition to the literature of the subject. He says, "Early pregnancy—that is from the second week of conception—can be readily and harmlessly ascertained by the careful introduction of the uterine sound, and digital touch, and the following physical signs will be presented to the examiner: There will be *lengthening* of the *body* of the uterus, with curving at one angle of it near the os of the fallopian tube, either left or right; flaccidity of the uterine walls; *marked dilatation of the internal os* of the cervix, and also of the cervical canal,

with pouting and cedema of the os tince, and plugging of the canal with a viscid mucus, due to congestion of the entire endometrium."

Truly the contributions to medicine are remarkable! That any one should seriously propose to use the uterine sound to diagnose pregnancy passes comprehension, and deserves notice only as one of the curiosities of journal literature.

PYRODIN.

Shortly after Dr. Dreschfeld, of Manchester, England, had published his clinical observations on pyrocin, a new antipyretic, an abstract of his paper appeared in the REPORTER, December 15, 1888. By reference to this abstract, it will be seen that Dr. Dreschfeld spoke of the new remedy in a very temperate way. While he asserted that it reduced temperature quickly and maintained it at a low level for some hours, he declared that it is not safe to continue the use of pyrocin for more than a few days; for, though much more powerful than either antipyrin, antifebrin, or phenacetin, it is also much more toxic than these bodies, the toxicity depending upon the production of hemoglobinemia.

Since the publication of Dr. Dreschfeld's paper, it has been discovered that the pyrocin he employed was a chemically impure substance, the active antithermic principle of which was acetyl-phenylhydrazin. The name pyrocin has since been given to the latter substance, freed from impurities, by most experimenters; although a few have spoken of it under the name of hydracetin.

It has happened with pyrocin as with almost all new drugs, that some writers have praised and used it indiscriminately. The German writers—Liebreich, Zerner, Oesterreicher, and P. Guttmann—however, have united in speaking of the dangers of the drug, and in warning against its use. In the *Deutsche med. Wochenschrift*, November 21, 1889, Dr. Renvers contributes an article

on pyrodin, based upon observations made in Prof. Leyden's clinic, in Berlin. This article appears to state so fairly both the advantages and disadvantages of the antipyretic in question that the essential parts of it deserve to be reproduced. In effect, Renvers asserts that the antipyretic power of pyrodin is greater than that of any other drug. Fifteen grains given to patients with high fever caused a fall of temperature of five degrees Centigrade in the course of from one and one-half to two hours, and this without the occurrence of symptoms of collapse. He declares that in the stage of typhoid fever when the fever is continuous, he has frequently seen fifteen grains of pyrodin produce a fall in temperature from 105° to 97° Fahr. Usually the temperature rises again after three or four hours, but in one of Renvers' cases of typhoid fever the fall in temperature persisted for thirty-six hours and was then followed by a slow rise to 104° without the occurrence of rigors. Only in pneumonia was the antipyretic action of the drug feeble and transient.

The absorption of pyrodin is said to be very rapid. Five minutes after the administration of fifteen grains, perspiration occurred, first upon the brow and then upon the whole body. It lasted about half an hour, and was comfortable to the patient. As the temperature slowly fell the frequency of the pulse diminished, and the beat lost its dicrotism. The urine was copious, but after forty-five grains of the drug had been taken it showed a mahogany or Burgundy-red color. It contained no blood, but much urobilin, and at times traces of albumin and a few hyaline casts. This dark color of the urine persisted for a day after the use of the remedy had been discontinued. Disagreeable results were observed to follow the use of pyrodin when forty-five grains had been taken in two days. A slowly increasing pallor of the skin and of the mucous membranes set in, slight cyanosis occurred, the patients became reckless, sleepless, and, in short, presented all the symptoms of a severe

anemia. In three of Renvers' patients, suffering with articular rheumatism, the use of from forty-five to sixty grains of pyrodin produced jaundice, with great prostration, and a large quantity of urobilin in the urine. The patients required care for weeks to recover from their anemia. The blood changes were interesting. They consisted in a rapid diminution of the red blood cells and an increase of the polynuclear white cells. There were also demonstrable changes in the form and size, as well as in the position, of the red blood corpuscles. The blood plaques were also increased. In experiments upon animals metahemoglobin could be recognized by spectroscopic examination.

Renvers concludes that pyrodin is a direct blood poison, and exerts its antithermic action by a destruction of the red blood cells. His final assertion, however, that it should not be experimented with further, and should be stricken from the list of our therapeutic treasures, is perhaps too sweeping. For a drug in the form of a comparatively tasteless powder, which reduces temperature more certainly than other antipyretics, and keeps it down for a longer period, may possess decided advantages, and these may be made available, while its dangers are being eliminated. The evil results which have followed the use of pyrodin in the hands of the German experimenters named Dreschfeld had been followed. The latter recommended that the drug should not be given (unless the temperature is very high) oftener than once in eighteen or twenty-four hours, and that the dose should be from eight to twelve grains for adults. Dreschfeld also declared that it was not well adapted to employment in cases of typhoid fever, owing to the early appearance of toxic symptoms. While, therefore, on the one hand, it is undeniable that pyrodin is a dangerous remedy, on the other hand it does not seem justifiable to condemn it as unfit for use. All the antipyretic drugs are dangerous in some degree, and it is hardly

too much to hope that pyrocin may yet find a distinct—though, perhaps, limited—field of usefulness, if given in small doses, at infrequent intervals, and with a full knowledge of the condition in which no good can be expected of it, as well as of the toxic results which may follow its injudicious administration.

A CORRECTION.

An unfortunate mistake occurred in the news column of the *REPORTER* for Jan. 18, in the announcement of the death of Dr. Oliver P. Rex, of Philadelphia. We have since learned that this report, which was not only rumored among the profession but which also appeared in one of our local dailies, was without foundation. Whilst sincerely regretting our mistake, we are, nevertheless, pleased to be able to correct it, and glad to state that Dr. Rex has quite recovered from his illness.

BOOK REVIEWS.

[Any book reviewed in these columns may be obtained upon receipt of price, from the office of the *REPORTER*.]

FOODS FOR THE FAT: A TREATISE ON CORPULENCY AND A DIETARY FOR ITS CURE. BY NATHANIEL EDWARD DAVIES, Member of the Royal College of Surgeons, England. American Edition. Edited by Charles W. Greene, M. A., M. D. 8vo, pp. 138. Philadelphia: J. B. Lippincott Company, 1889. Price, 75 cents.

Numbers of persons in comfortable circumstances take on an increased amount of fat after the period of middle life, at the very time when, as a rule, physical activity diminishes. In such persons it is common to find evidences of a weak heart. The problem for the physician to solve is, how best to lessen the amount of fat carried by the patient, and at the same time to improve the condition of his muscles, especially the heart-muscle. The generally accepted plan of treatment is to lessen the amount of food containing starch, sugar, and fat, and to improve the muscular system by graduated exercise. The aim of the present author is to show that it is perfectly possible and not very difficult, to go on eating—and eating very well indeed—and yet be cured of excessive stoutness. To this end he gives lists of foods suitable for a corpulent person, and indicates those obtainable (in England) during each month of the year. The lists include lean meats, except pork; game and poultry, fish, oysters, lobsters, crabs, etc.; green vegetables, and fresh fruits. Coffee and tea, with a little milk, and sweetened with sac-

charin, are allowed as drinks, and so is a weak wine.

Many of the bills of fare presented by the author certainly look very tempting; an epicure could find sufficient to satisfy him, and he might escape obesity to be attacked with gout. Of course, much of what the author declares to be allowable for a corpulent person is beyond the reach of the poor, and even of many in moderate circumstances. But the book is a very suggestive one, and contains many hints in the direction of making a restricted diet contain savory dishes.

EGYPT AS A WINTER RESORT. BY F. M. SANDWICH, F. R. G. S., Formerly Vice-Director of the Sanitary Department of Egypt. 8vo, pp. vi, 153. London: Kegan, Paul, Trench & Co., 1889. Price, three shillings and sixpence.

Englishmen go to the Riviera and to Egypt as Americans go to Florida and Southern California. Probably very few Americans will ever visit Egypt as a winter health resort, but as they are the greatest travelers in the world the information contained in Mr. Sandwich's book will be interesting to many.

The author says that about six thousand visitors come to Cairo during the winter months. To indicate how well the climate treats these visitors, he adds that, in a medical experience of six winters, he has lost only two patients who came to Egypt for their health. Both of these, it appears, were patients far advanced in consumption, who ought never to have left their homes: one was an Australian, who reached Cairo at the beginning of 1888, and died there in February; the other was an American, who died in December, 1888, a few hours after reaching Cairo.

The author says that the climate of Egypt, during the winter months, is suitable for bronchial and pulmonary affections which are not too far advanced, and for a great variety of chronic ailments for which a mild dry climate, permitting an outdoor life, is desirable. Much valuable information is given concerning the kind of clothing a patient should bring with him, and how he can derive the greatest benefit from the climate with the least risk from the sudden fall of temperature at sundown, and from the annual changes in the Nile waters. It would appear to be wisest to arrive in Egypt in November, and to depart in May.

The second half of the book is taken up with an account of excursions which can be made from Cairo, from the surrounding towns, and up the Nile.

The book as a whole is a welcome addition to our knowledge of health-resorts and their suitability for different diseases. In an appendix, the author gives detailed information concerning some of the diseases most common among health-seekers coming to Egypt, and the general result of treatment. The publishers have done their part of the work handsomely.

LITERARY NOTES.

We are in receipt of the first number of the *Dixie Doctor*, a new Southern Journal to be published monthly in Atlanta, Georgia. The *Dixie Doctor* for January has 20 reading pages, somewhat larger than the *REPORTER*; it is well printed on good paper, and is made up of short and interesting articles. It is edited by Dr. T. H. Huzzar, of Atlanta, and published by the *Dixie Doctor* Publishing Co.

NOTES AND COMMENTS.

Dengue or Influenza?

An interesting feature of the prevailing epidemic, and one which has attracted considerable attention, especially of Paris physicians, is the fact that the character of the present influenza, or *la grippe*, is quite at variance with the symptoms which have been presented by other kindred epidemics. Thus it is observed that the catarrhal symptoms have been notably slight, the predominant features being fever, muscular pains, prostration, headache, and in some cases even a scarlatiniform eruption. Now, it is pointed out, that the dengue, an affection hitherto almost entirely confined to tropical climates, prevailed extensively in Syria last spring, and has since occurred widely in Constantinople and has even been observed elsewhere in the South of Europe. This fact, says the *Lancet*, Dec. 28, 1889, added to the unusual features of the present epidemic, has given rise to the idea that it is possibly really the dengue, and not the influenza, which has invaded the temperate zone and has been modified by a subjection to altered climatic conditions. At the Academy of Medicine of Paris, Dr. Proust, on Dec. 17, declared that the present epidemic in Paris, although having some features in common with dengue, could not be regarded as being that disease, but that it is really influenza with pronounced nervous symptoms. He stated that dengue has never passed beyond the limits of 45° N. and 25° S. latitude. Rochard added that the characteristic eruption and articular pains of dengue were not exhibited by the sufferers from the prevailing epidemic, and Dr. Colin said that it resembled other epidemics of *la grippe*. Dr. Dujardin-Beaumetz, however, thought there were several points of resemblance between the two affections, and that a hasty conclusion was to be deprecated; on the other hand, Dr. Brouardel held that dengue and influenza were as specifically distinct as typhoid and typhus. Dr. Bucquoy pointed to the analogies between the two, and seemed inclined to the view that the present epidemic is dengue modified by climatic conditions. The patients he had seen complained of muscular or articular pains and presented redness of the palate and a scarlatiniform eruption on the chest. Dr. Bouchard said that dengue is contagious, *la grippe* is not; and that the latter

did not extend along the lines of commercial intercourse, but was apparently influenced by atmospheric conditions. Dr. Proust reasserted his opinion that the epidemic was not dengue, which at Constantinople was not modified by the cold season. He also said that the eruptions noted by Dr. Bucquoy had not been observed by others. At the Medical Society of the Hospitals on Dec. 18, Dr. Legroux introduced the topic of the epidemic, and pointed out how it differed from classical influenza, catarrhal manifestations being exceptional, headache, ocular pain, nausea, colic, and fever chiefly marking it, and recovery following after two or three days in bed. He had seen some grave cases, and cited one of a lady in whom the pains in the head were so severe, with nausea, delirium, rapid pulse, and temperature of 102.2° F., that meningitis was feared. The symptoms disappeared in forty-eight hours under treatment by antipyrin. In children he had observed coryza or bronchitis, or more often gastro-intestinal catarrh. In every case the duration was shorter than ordinary influenza. Dr. Sevestre had noticed two types. In some, the minority, there were features of ordinary influenza. Others were marked by the absence of catarrh of the respiratory passages, by intense pains in the head, eyes, and loins, and by fever. In one-third of his cases there was an eruption on the face resembling either scarlatina or measles, and recalling dengue. In terming such cases *la grippe* the usual meaning of the term was altered. The speakers concurred as to the value of antipyrin. A writer in *Le Progrès Medical*, Dec. 21, 1889, under the heading "Grippe or Dengue," in which the outbreak among the employees at the Louvre at the end of November is stated to be the starting-point of the epidemic that rapidly spread through many large establishments in Paris, refers to the descriptions given by Dr. Le Brun of the Beyrout epidemic of dengue, and suggests that both influenza and dengue are now prevailing in Paris. In particular the characters of an outbreak observed in a large scholastic institution in Paris, are noted as closely approximating to the latter affection—sudden onset with frontal headache or orbital pain, difficulty in walking, pain in the limbs, etc.; rarely cough, but slight tickling in the throat; many have constipation, nausea, or even vomiting. The throat was congested, tongue dry, pyrexia high (102.2° to 104°), and by

the end of the first day a scarlatiniform rash, which became more like that of measles on the second day, when the fever slightly abated. The rash faded on the third or fourth day, when the patients were nearly recovered. In some cases, where the patients got up too soon, there were relapses of fever, with rigors and headache, but no fresh eruption. Desquamation was not observed in any case. Dr. de Ranse points to the discussions at the above-named Paris societies as justifying the hesitation at first expressed by the Russian physicians before concluding that the epidemic at St. Petersburg was influenza. He propounds three questions, which, shortly put, are: 1. Are influenza and dengue distinct diseases or only the same disease modified by climate? 2. May they develop simultaneously in epidemic state in the same region and combine to form a hybrid affection? 3. If entirely distinct, is the present epidemic influenza or dengue? In answering these questions, and concluding in favor of influenza, he rightly says that the exceptional occurrence of some cases showing a rash is not enough to ally it with dengue, and believes that some of the earlier recorded epidemics of influenza would show as marked an absence of pulmonary catarrh as is now presented.

The Characters of the Ocular Fundus during the Hypnotic State.

Messrs. Luys and Bacchi, of Paris, have been investigating the condition of the ocular fundus with the ophthalmoscope in patients who had been previously hypnotized, and their conclusions are recorded in a recent number of *La Presse Médicale*. Nine subjects, six females and three males, were successively submitted to ophthalmoscopic examination, the examination being undertaken during a period of catalepsy, of lucid somnambulism, and in the mixed condition of fascination. The normal state of each fundus was first carefully noted, especially the exact tint of the fundus, and the retina was observed to be divided into three concentric zones. The subjects of the investigations were then placed in a cataleptic state, and the fundus examined. The fullness of the retina was found to have suddenly disappeared. The discs were of a rose tint, the three concentric zones became mingled with one another, and at the same time the arteries and veins became more or

less enlarged. This hyperæmic condition remained as long as the subject continued in the cataleptic state. The iris also was dilated, and almost insensible to light. The same features were observed to occur during the state of fascination. In the period of lucid somnambulism the changes were not markedly different, although the disc was less injected. The iris was also more responsive to light.—*Medical Press and Circular*, Dec. 25, 1889.

The Psychology of Epidemics.

Every epidemic carries in its train curious exaggerations of many well-recognized characteristics, and these frequently call for appreciation and for treatment almost as much as the disease in which they originate. Perhaps one of the most striking of these mental perversities is to be found in the idea that the epidemic is to be treated by "common sense," or by nostras which have been largely advertised, or by specifics which are known to the laity mainly through their frequent mention in the daily press. Those suffering under this delusion feel that it is wholly unnecessary to seek skilled assistance, and they boldly dose themselves with remedies of whose power and properties they are absolutely ignorant. In Vienna it has already been found necessary to forbid the sale of antipyrin, except under doctor's prescriptions, as no less than seventeen deaths were attributed to stoppage of the heart's action owing to overdoses. The freedom with which the prescription of this remedy has been assumed by the public has long since been viewed with anxiety by the medical profession, and frequent warnings have already fallen upon deaf ears; and yet it is to be feared that if the epidemic of influenza should spread, many more examples of recklessness will have to be recorded. It is serious enough to cope with an epidemic and its sequelæ, without having matters complicated by ignorant and reckless experimental therapeutics.—*Lancet*, Jan. 4, 1890.

Pennsylvania Hospital.

At a special meeting of the Medical and Surgical Staffs of the various departments of the Pennsylvania Hospital, held January 8, 1890, the following resolutions were adopted:

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Dr. James H. Hutchinson, we have been deprived of a valued and beloved associate, while the Hospital has lost an able and faithful officer, the medical profession a distinguished ornament, and the community one of its best citizens.

Resolved, that we hereby place upon record our high estimate of the character of our departed colleague, who, during the many years of his professional life among us, commanded our respect by his ability and sterling integrity, while his genial and kindly disposition won for him our warm friendship; he has left behind him a spotless reputation and a memory which will be always dear to those who were privileged to know him.

(Signed) JOHN H. PACKARD, M. D.,
Secretary of Staff.

Antiseptic Mouth Wash.

Dr. Miller gives the following formula for an antiseptic mouth wash, in the *Allgemeine Med. Central-Zeitung*, Nov. 16, 1889, and states that it will completely sterilize the mouth, is not unpleasant to the taste, and is innoxious.

B	Acid thymic	gr. ijss
	Acid benzoic	gr. xxxviiij
	Tinct. eucalypt.	f 3 jv
	Hydrarg. bichlorat.	℥ xiiij
	Alcohol	f 3 jv
	Ol. menth. piper	℥ xij

M.—Sig. Add sufficient quantity to a glass of water to produce slight cloudiness, and use as a mouth wash.

Borated Lanolin.

The following preparation is recommended as being excellent for softening the hands or general toilet purposes: 1 part of borax is rubbed with 10 parts of lanolin, and 100 parts of water are gradually added. This makes an emulsion in which the lanolin is very finely divided and quickly absorbed by the skin. It may be blended with glycerin and perfumed.

Permission to Operate.

Medical circles in Belgium have been considerably excited recently by the trial of an action against a well-known surgeon who is on the staff of a hospital in Liège. More

than two years ago a child was brought to the hospital for the advice of the surgeon in question on account of a curvature of the tibia. The mother was told that an operation would be necessary, to which she replied that she must obtain the grandmother's consent. Shortly afterwards the child was brought back to be operated on. Unfortunately, gangrene had supervened, and the child's leg had to be amputated. After the lapse of some two years, the father of the child appeared on the scene, and, declaring that his consent to the operation had not been obtained, commenced an action against the surgeon for having operated without it, the result being that the court awarded him 10,000 francs damages as compensation for the loss of the child's leg. It is pointed out by medical critics that the court seems to have proceeded on the principle that a surgeon who operates is liable unless he can prove that a child's father has consented. It seems to have been taken for granted that when the child was brought to the hospital the second time it was merely for another consultation, and that no consent had been given as understood by the defendant. An appeal to a higher court has been made, and the result of that is very uncertain. It is, however, evident that great care will have to be exercised by hospital surgeons in future, at least in Belgium. Indeed, it would seem that a written permission to operate may have to be insisted on in all cases in that country.—*Lancet*, Jan. 4, 1890.

Cholera and Europe.

The epidemic of cholera which has, for so many months been raging in the valleys of the Tigris and Euphrates and the interior of Mesopotamia, has also made considerable inroads into Persia. Reports of the epidemic having crossed the western boundary of Persia have been heard from time to time, but it has now been announced to the Faculty of Medicine, of Paris, that there has been an alarming increase of the disease in Central Persia and on the Turko-Persian frontier, and that the inhabitants are fleeing towards the north. All those who can afford the journey are trying to reach the Russian ports on the Caspian. Remembering that this is the route into Europe which the cholera has so frequently taken, the announcement must be regarded as one of great gravity.

NEWS.

—Professor Eberths, of Halle, has succeeded Professor Weigert as editor of the *Fortschritte der Medizin*.

—The various courses of medical instruction, lectures and clinics in connection with the Johns Hopkins Hospital, Baltimore, were inaugurated Jan. 6.

—Dr. Louis J. C. Kimmell, of Philadelphia, died suddenly of pneumonia, Jan. 19. Dr. Kimmell was a graduate of the University of Pennsylvania, of the class of 1886.

—Dr. Butz, of St. Petersburg, Russia, claims that 650,000 cases of influenza were reported during the recent epidemic; or, in other words, that one-third of the population of that city suffered from the disease.

—According to the last report of the Board of Health of Michigan, the influenza is still on the increase in that State; the percentage of observers reporting the disease having increased from 77 (last week) to 82.

—Dr. Paul Hoffman, Assistant Superintendent of Schools of New York, was taken to Bellevue Hospital on Jan. 4, a raving maniac from the effects of an attack of the grippe which he had been suffering from for several days.

—A male attendant of the insane asylum of Columbus, O., eloped with one of the patients, a young lady, 19 years old, on Jan. 19. The patient had been in the asylum for six months, and her case was not considered serious.

—At the annual meeting of trustees of the State Miners' Hospital, located at Ashland, Pa., Dr. J. C. Biddle was re-elected Surgeon and Superintendent of the hospital. Dr. Biddle has been connected with this institution ever since its opening some five years ago.

—Dr. William Goodell, of Philadelphia, has been invited by the Gynecological Section of the Tenth International Medical Congress, which is to be held in Berlin, during August of this year, to open the discussion on the Induction of Premature Labor, by a paper on that subject.

—A peculiar suit for damages has been brought against a Philadelphia physician. The complainant states that the doctor in question positively pronounced her to be pregnant, but time proved the erroneousness of the diagnosis. She therefore brings a

suit on the plea of "bringing disappointment."

—The Shreveport Medical Society held its regular meeting on Jan. 7.

The annual election of officers resulted as follows: President, Jno. J. Scott, M. D.; vice-president, H. C. Coty, M. D.; recording secretary, A. A. Lyon, M. D.; corresponding secretary, Randall Hunt, M. D.; treasurer, Walter Hilliard, M. D.

—A widow in New York has brought a suit for damages against a well-known specialist for taking her husband's brain, and also for violating an alleged contract to give her \$1,000 for using her husband as a medical object-lesson. The physician denies any promise of \$1,000, and states having sent the widow \$25 out of sympathy.

—There were 416 deaths in Boston during the week ending January 11. One hundred and nineteen people are reported to have died of pneumonia, and a large number of these cases were caused by the prevailing influenza. In the corresponding week last year there were but 12 deaths from pneumonia and but 180 deaths altogether.

—The arrival in Havana, Cuba, is announced of Dr. Hamilton, of the Marine-Hospital Service, and Dr. Horlbeck, of the Charleston Board of Health. They are a part of a medical committee empowered to make a midwinter inspection of the yellow-fever habitats in Cuba and also of the Key West quarantine, Tampa, Sanford, and other exposed points in Florida.

—For the week ending January 4, 1890, there were 492 deaths in Philadelphia, and 1,202 deaths in New York. For the week ending January 11, 714 deaths occurred in Philadelphia, whilst the latest report for the week ending January 18, shows that the number of deaths has further increased to 777. This startling mortality is claimed to be largely due to the prevalence of the influenza.

—A county hospital has just been completed in Omaha, but the contractors cannot get anybody to accept it and take it off their hands. The county commissioners refuse to accept the hospital except from the hands of the architect, and the latter for some reason cannot be found. The result is that the contractors have a very fine hospital on their hands, but do not know exactly what to do with it.

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